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**BIOGEOCHEMISTRY PROJECT UPDATE:  
SNOW CORES 1989-1993  
PLASTIC LAKE & HARP LAKE**

**APRIL 1993**



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**BIOGEOCHEMISTRY PROJECT UPDATE:  
SNOW CORES 1989-1992 –  
PLASTIC LAKE & HARP LAKE**

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## **PREFACE**

The Unpublished Data Report series is intended as a readily available source of basic data collected for lakes and watersheds in the Muskoka-Haliburton area of Ontario. These data were collected as part of the Acid Precipitation in Ontario study.

The Acid Precipitation in Ontario Study (1979 - present) was initiated, in part, to investigate the effects of the deposition of strong acids on aquatic and terrestrial ecosystems in Ontario. The primary findings of these studies have been and will continue to be published as reviewed papers and technical reports.

## ABSTRACT

Snow was collected and analyzed as part of the Biogeochemistry program to determine chemical and hydrological inputs to groundwater flow in two Dorset area watersheds. Graphs of chemistry, snow depth and water equivalence data for the winters of 1989/90, 1990/91 and 1991/92 are included, as is meteorological data for the same time period. Complete data summaries are also included for data collected from January 1988 to April 1992.



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## METHODS

### Snow sampling

Methods used for collection of data in this report remain unchanged from those used in a 1989 data report (Ont. Min. Envir., 1989). Snow was collected from the same six sites in both the Harp 5 and Plastic 1-08 watersheds. The Hawkeye Lake study was discontinued in 1989 and no further samples were collected from this watershed.

Snow was collected for chemical analysis on a weekly basis during the season for as long as there was a sufficient amount of snow on the ground to provide an uncontaminated sample. Debris falling from trees throughout the winter eventually resulted in contaminated samples as the debris accumulated and the snow pack decreased. Sampling for snow depth and water equivalence of the snow continued until there was no snow left on the ground. This varied from site to site, depending on the aspect of the slopes and the amount of shading from the overstory.

All sites were sampled for density and water equivalence on a weekly basis. This was usually done at the same time as chemistry sampling, but the sampling schedule was often increased during periods of rapid change at the sites (see data summaries for exact sampling dates). A visual estimate of percent snow cover was made at each site during each visit.

## **Meteorological Data**

Daily precipitation and temperature data was collected at meteorological stations located adjacent to the collection sites at Harp and Plastic Lakes. A description of the site locations and equipment used can be found in the 1989 snow core data report (Ont. Min. Envir., 1989). Where data was not available from these sites due to equipment malfunction it was obtained from the next closest meteorological site. Heney Lake meteorological site was used to fill in missing Harp data, while Paint Lake meteorological site data was used when Plastic Lake data was not available.

## **Summary Data Tables**

Summary tables 1 to 12 contain chemistry and deposition results of individual sites from January, 1988 to April, 1992. In the snow depth and water equivalence columns the mean and standard deviation of three samples taken during one visit is presented. Values are not weighted by the percent snow cover. The results of the chemical analysis for each site are also presented in this table. Iron, manganese, aluminum, magnesium and dissolved organic carbon were added to the list of parameters in December, 1989. Data is available in Lotus 123 format upon request.



## **Chemistry Graphs**

Selected parameters (same as previous report) were plotted versus time. The graphs show the mean and standard deviation of the results from all the sites in the watershed. For most of the season all six sites are included. During snowmelt in the spring, however, some sites lost their snow cover earlier than others. Some sites were also judged to contain too much debris to be sampled. In these cases the plotted data represents only the mean and standard deviation of those sites that were sampled.

## **Snow Deposition and Weather Graphs**

The graphs showing snow depth and water equivalence are also the mean of six sites. All data is weighted by the percent cover for that sampling date. Cover is usually 100%, except during spring when it varies between sites. During these times a mean of the percent cover from the six sites was used to represent the entire watershed.

## **REFERENCES**

Ontario Ministry of the Environment. 1989. Biogeochemistry Project: Snow Cores 1988-1989 Plastic Lake, Harp Lake, Hawkeye Lake. Ont. Min. Envir. Data Report, December 1989.

# PLASTIC LAKE SNOW CHEMISTRY 1989/90

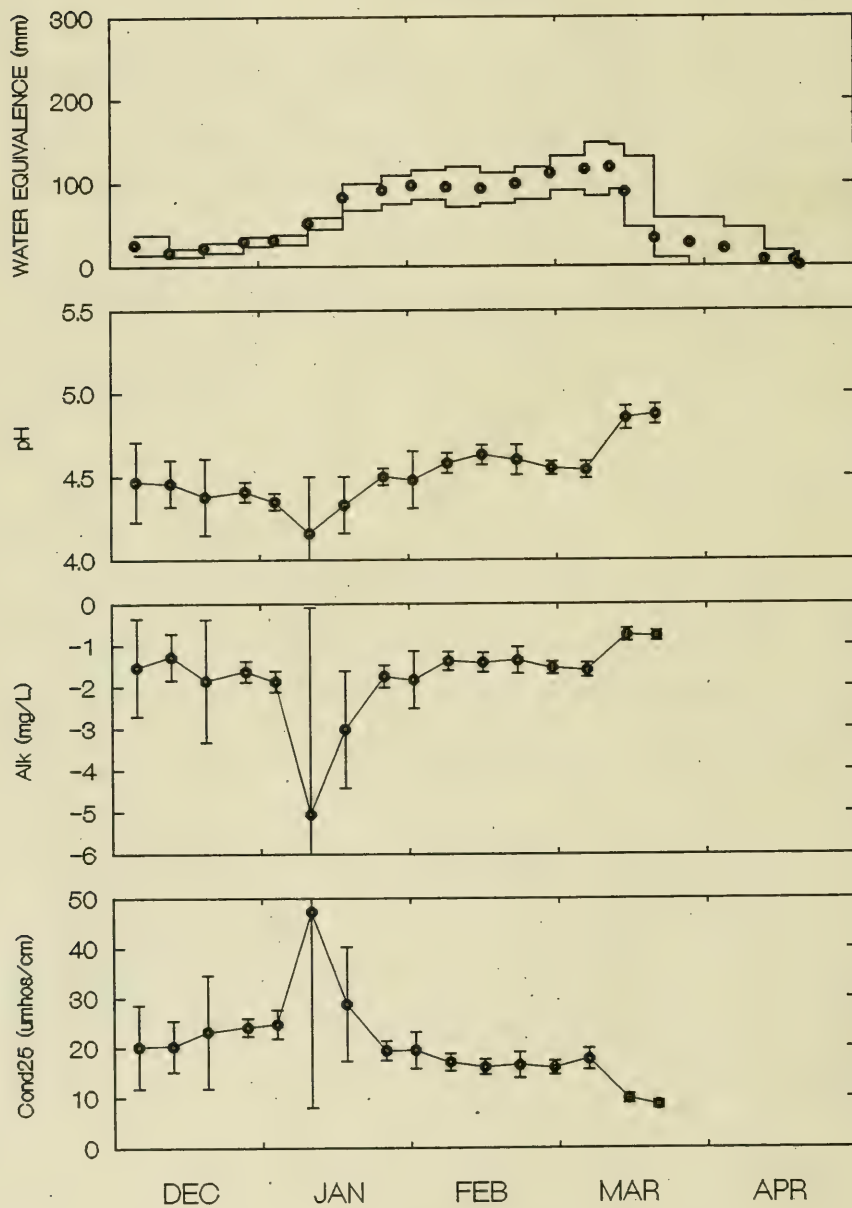


Fig. 1

# PLASTIC LAKE SNOW CHEMISTRY 1989/90

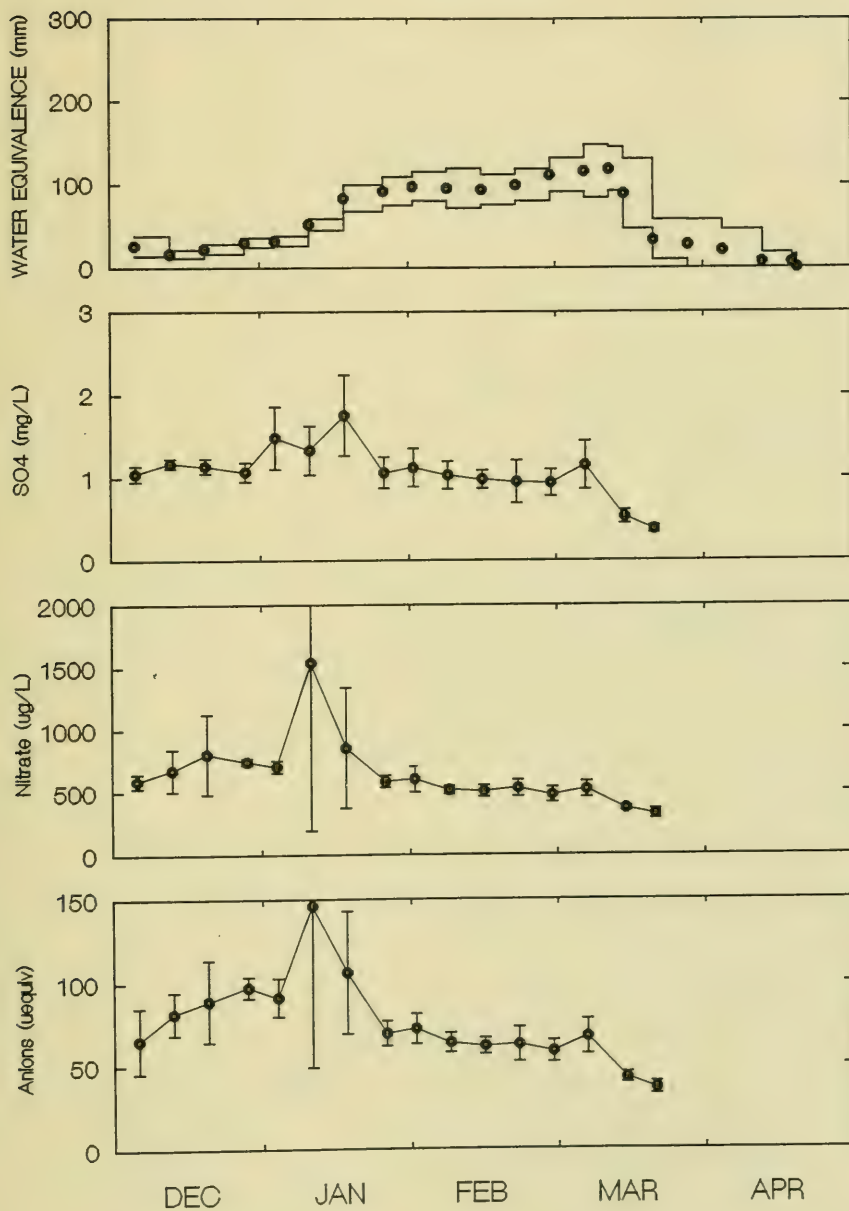


Fig. 1 (cont'd)

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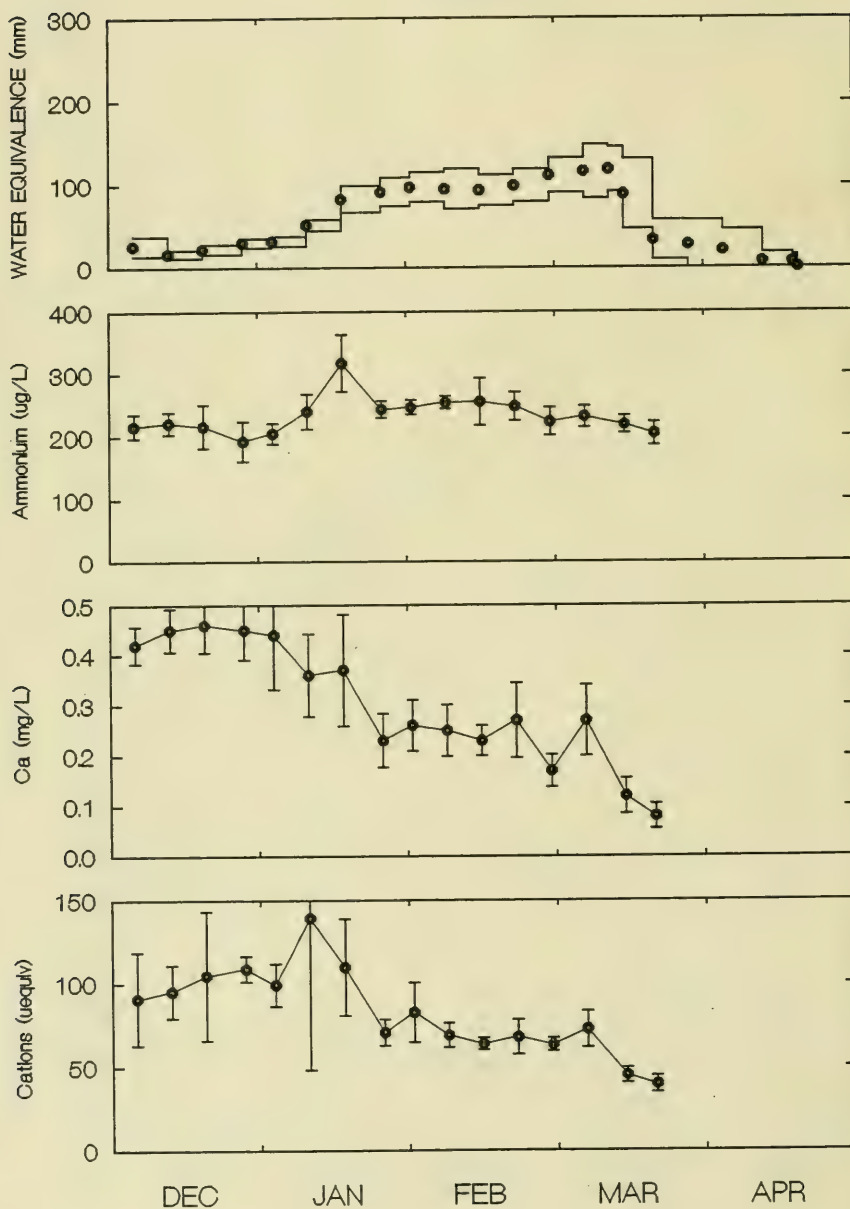


Fig. 1 (cont'd)



PLASTIC LAKE SNOW CHEMISTRY  
1990/91

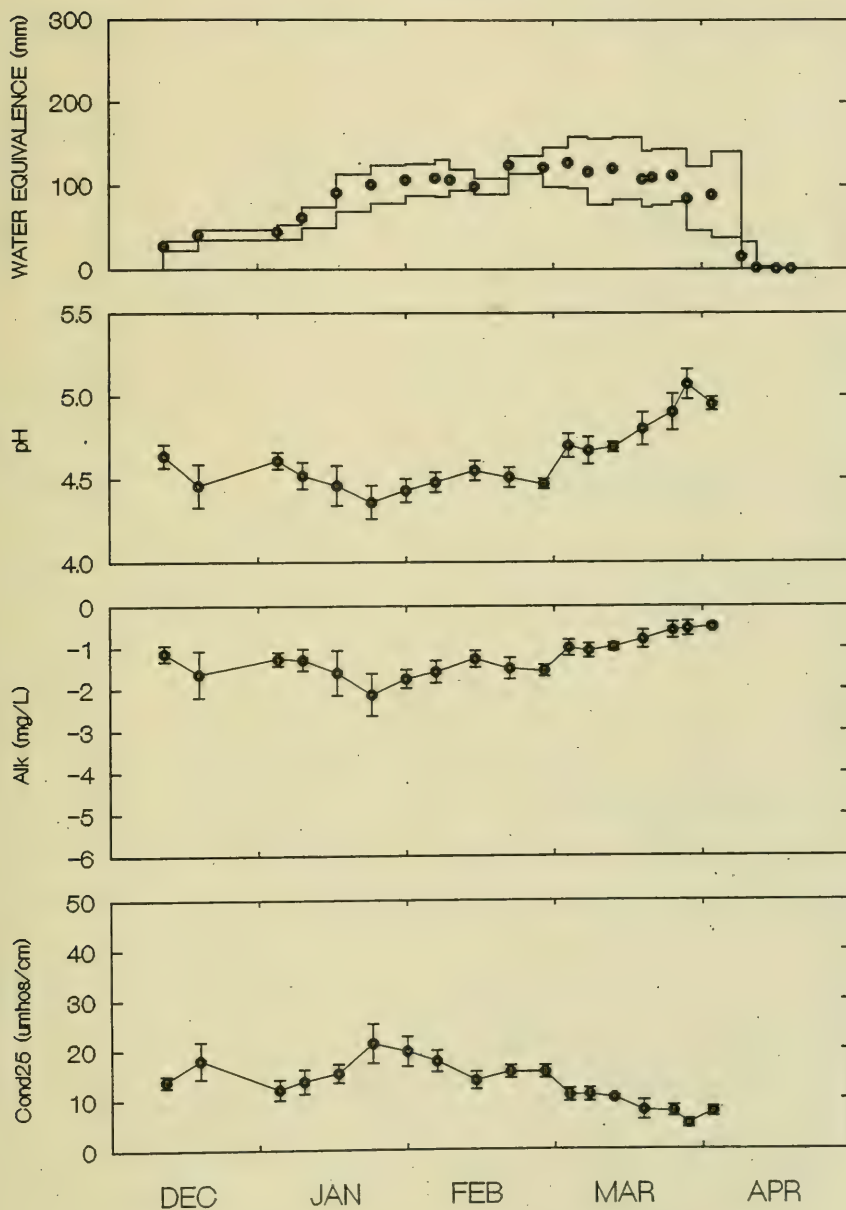


Fig. 2

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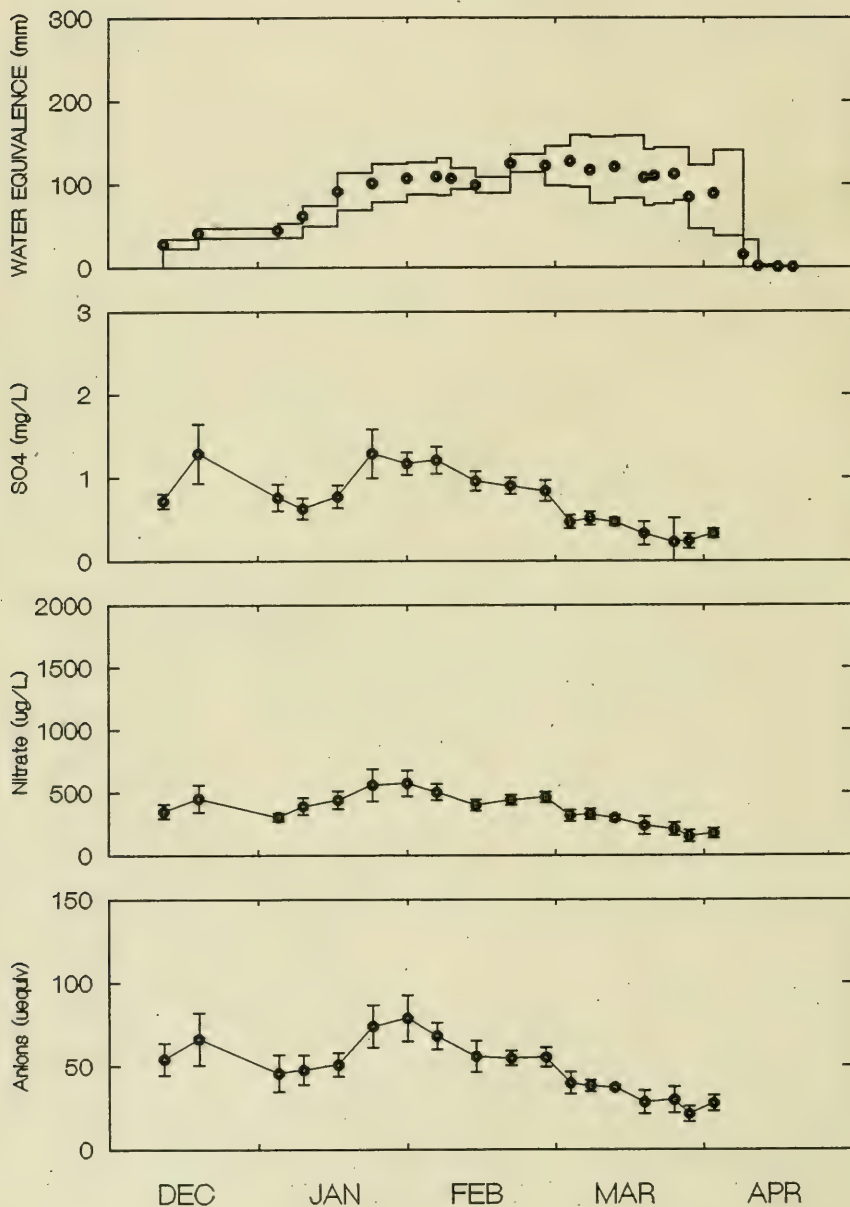


Fig. 2 (cont'd)

# PLASTIC LAKE SNOW CHEMISTRY 1990/91

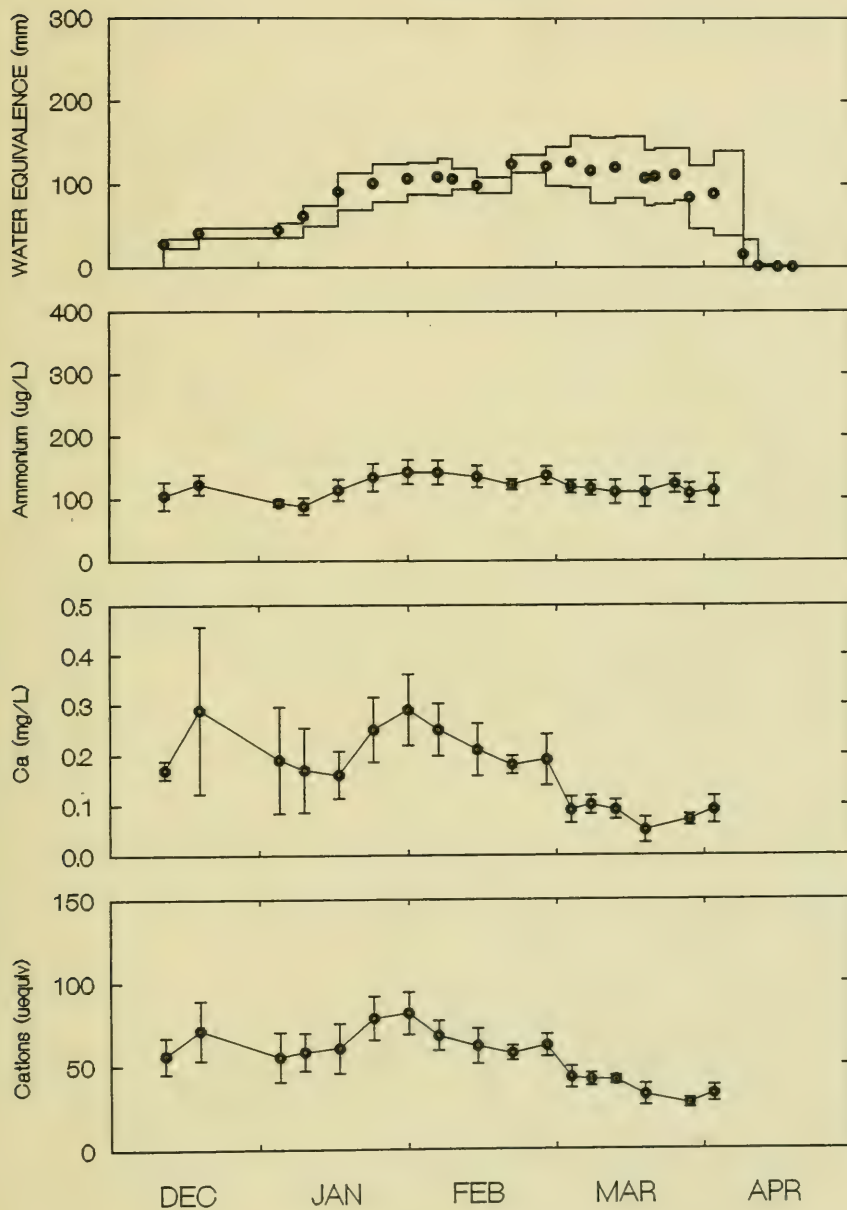


Fig. 2 (cont'd)

# PLASTIC LAKE SNOW CHEMISTRY 1991/92

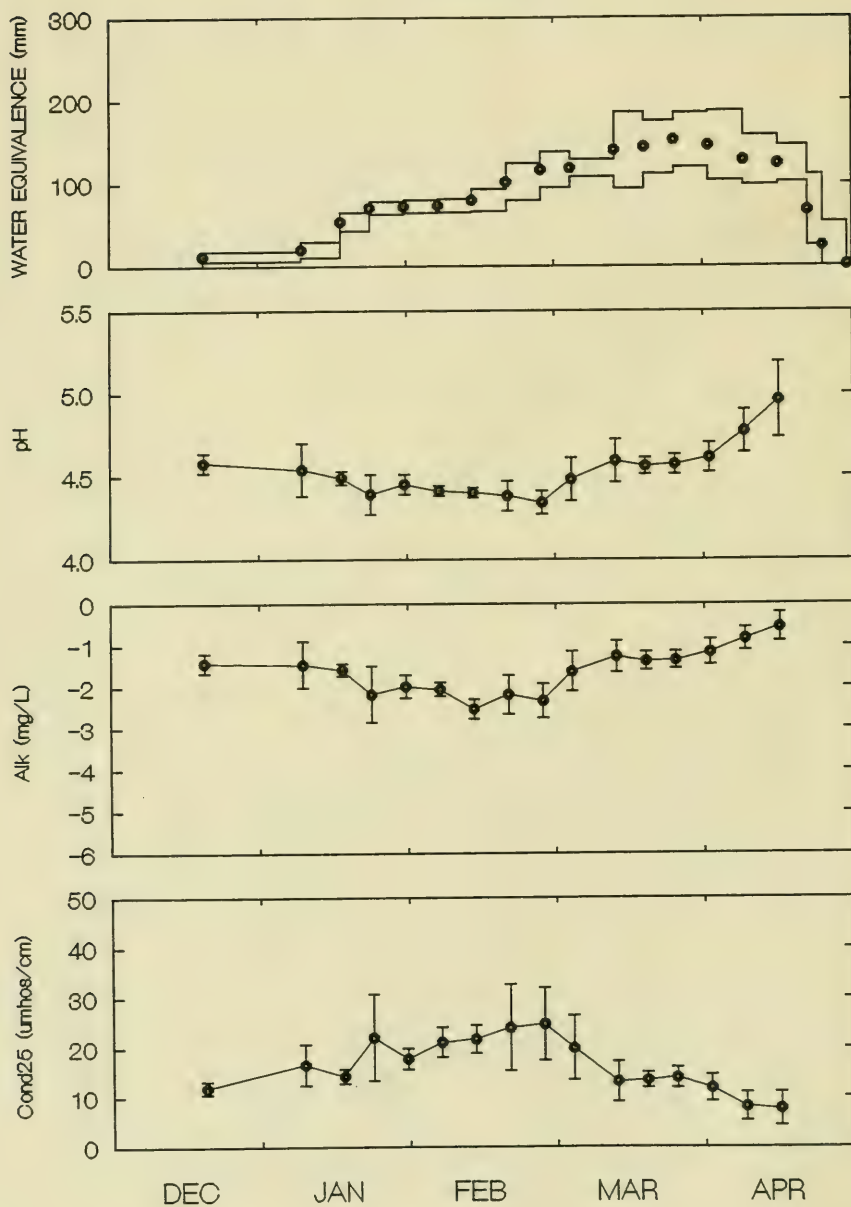


Fig. 3



# PLASTIC LAKE SNOW CHEMISTRY 1991/92

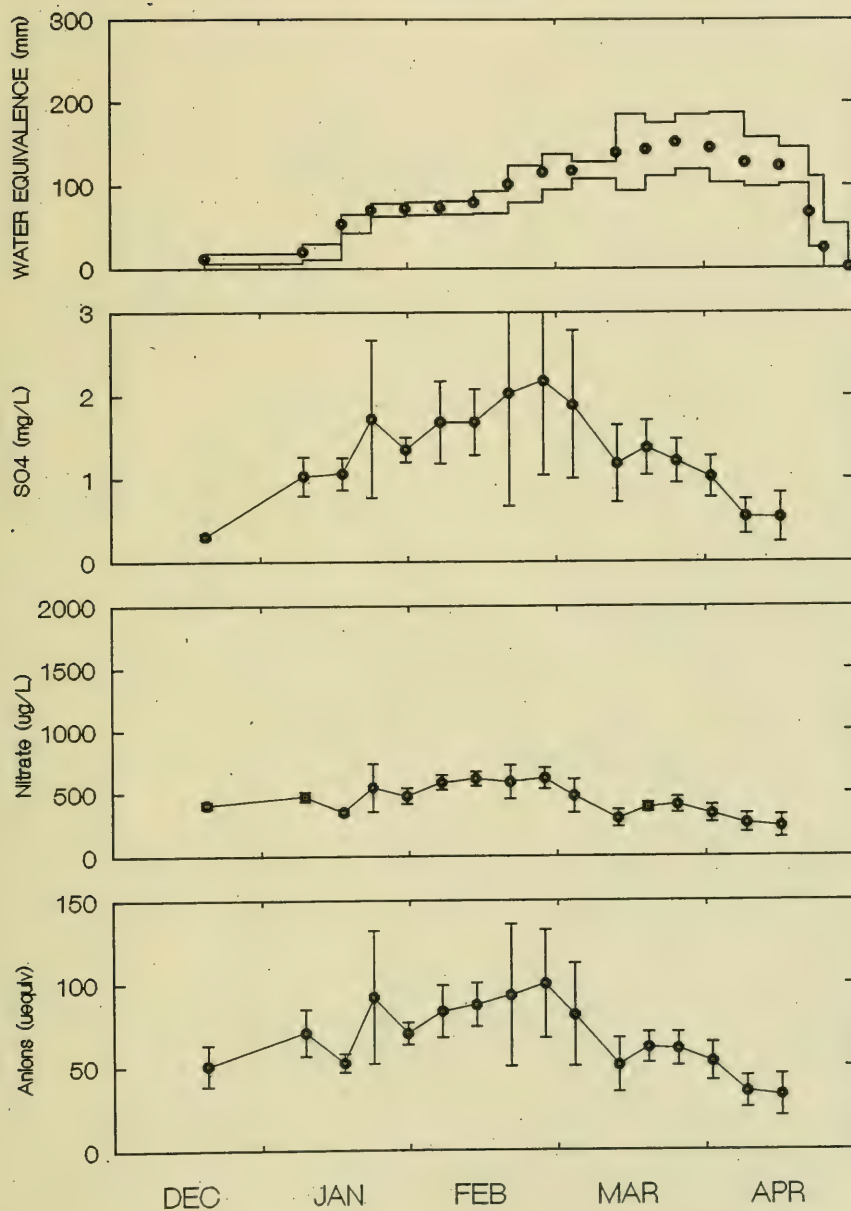


Fig. 3 (cont'd)

# PLASTIC LAKE SNOW CHEMISTRY 1991/92

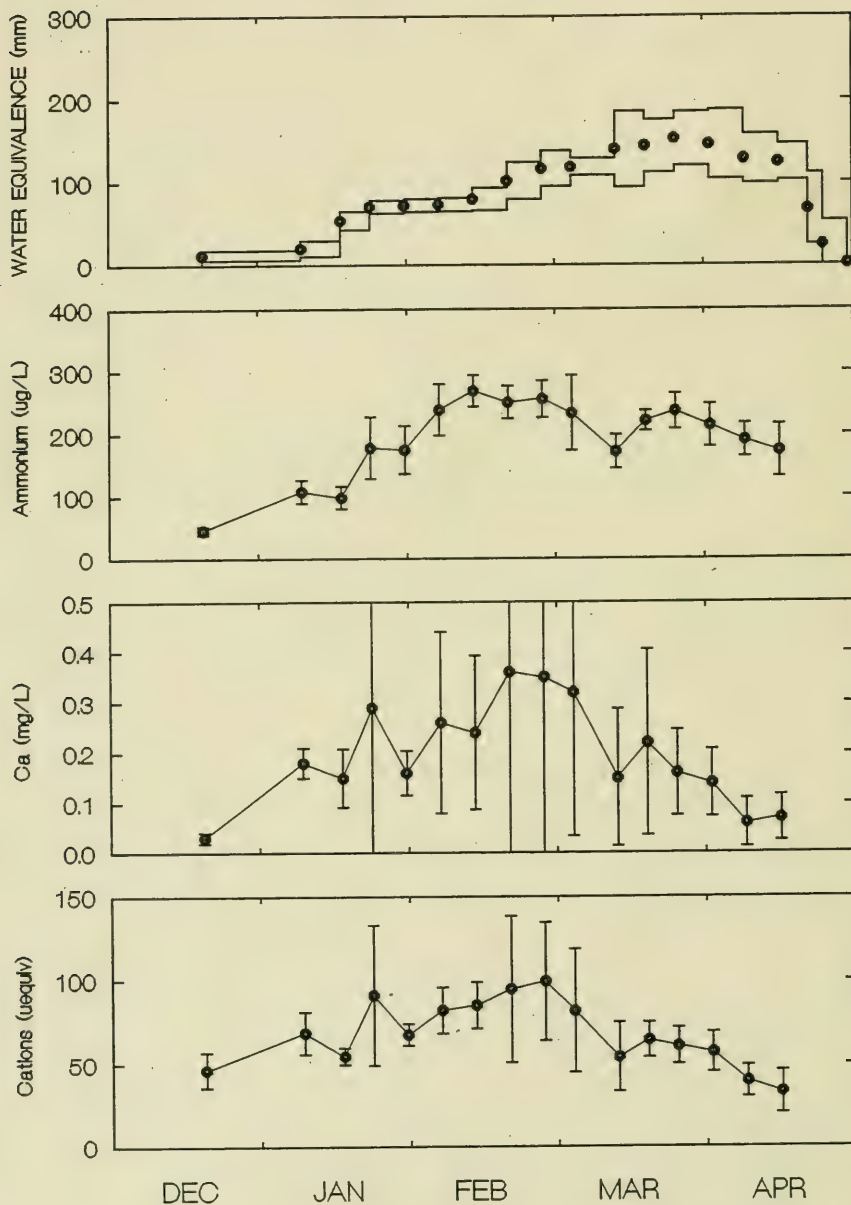


Fig. 3 (cont'd)

# HARP LAKE SNOW CHEMISTRY 1989/90

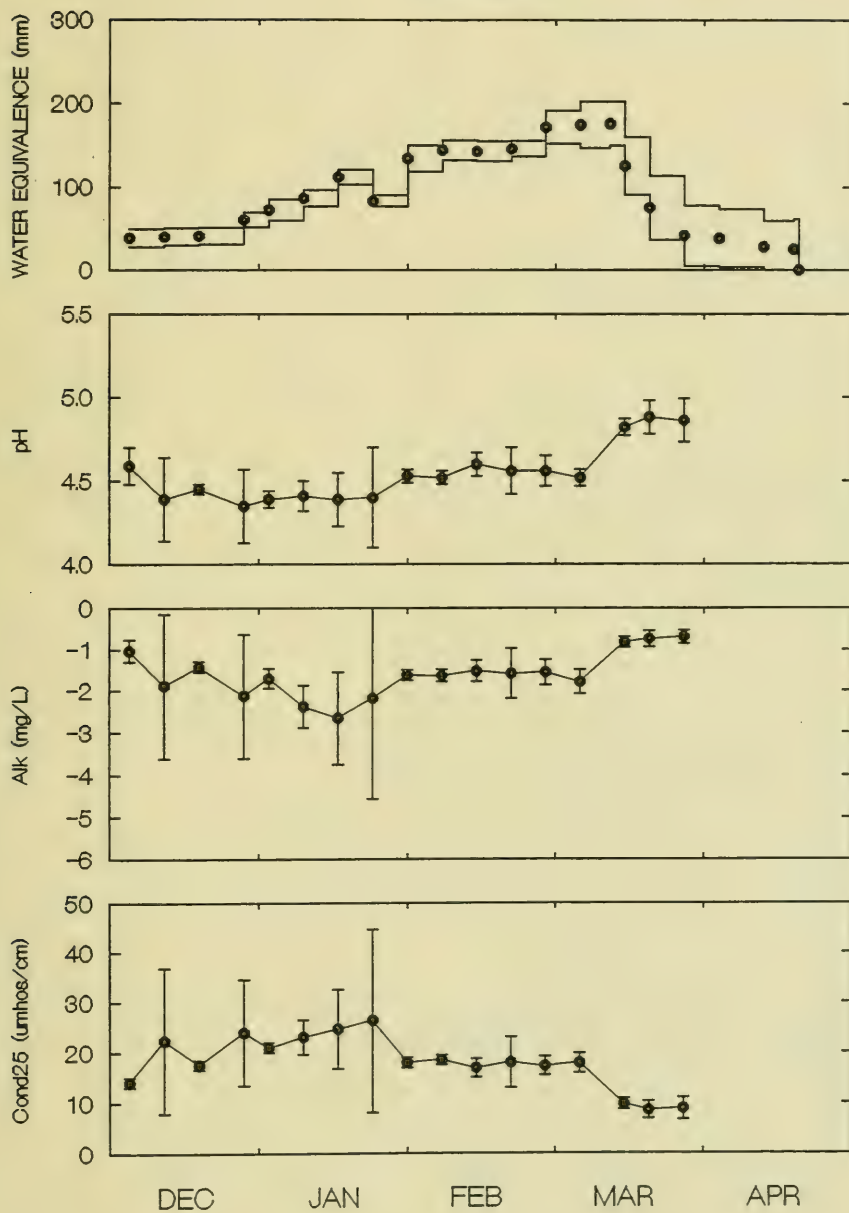


Fig. 4

# HARP LAKE SNOW CHEMISTRY 1989/90

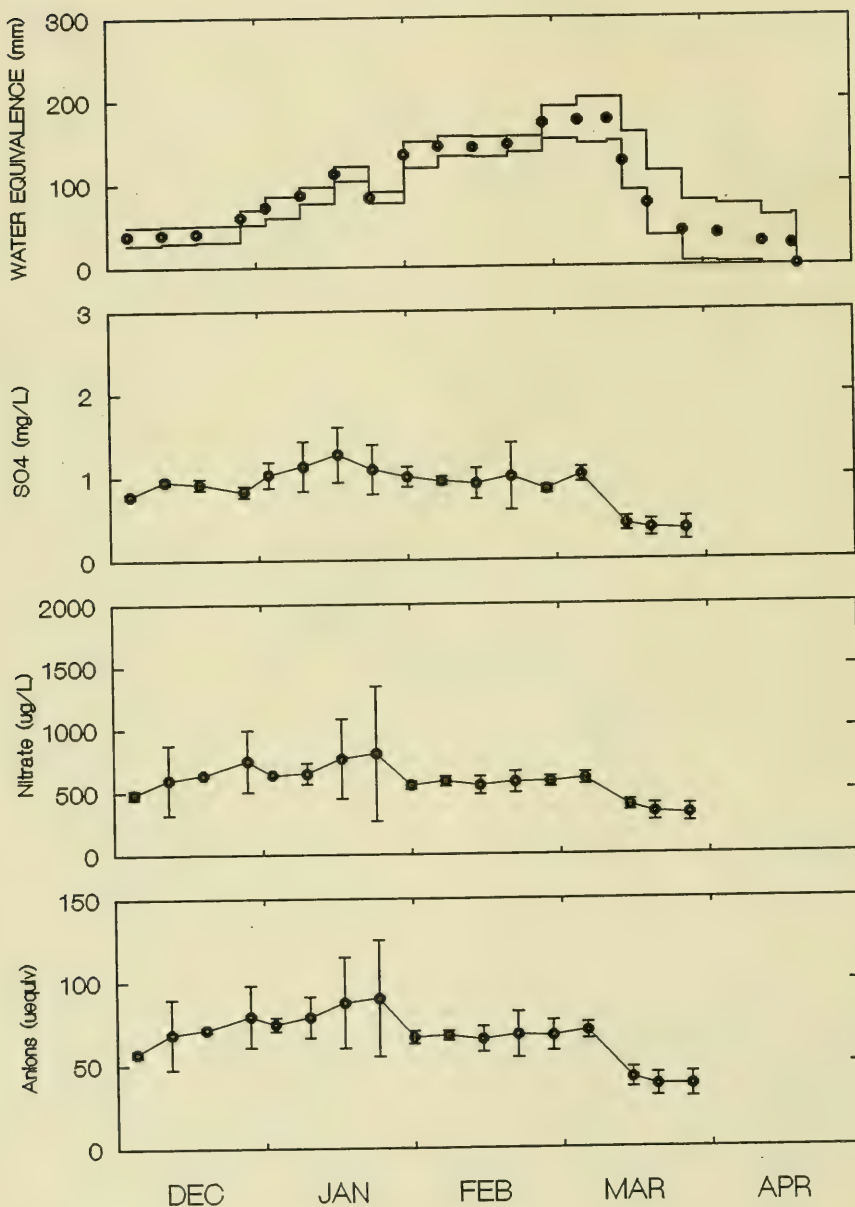


Fig. 4 (cont'd)

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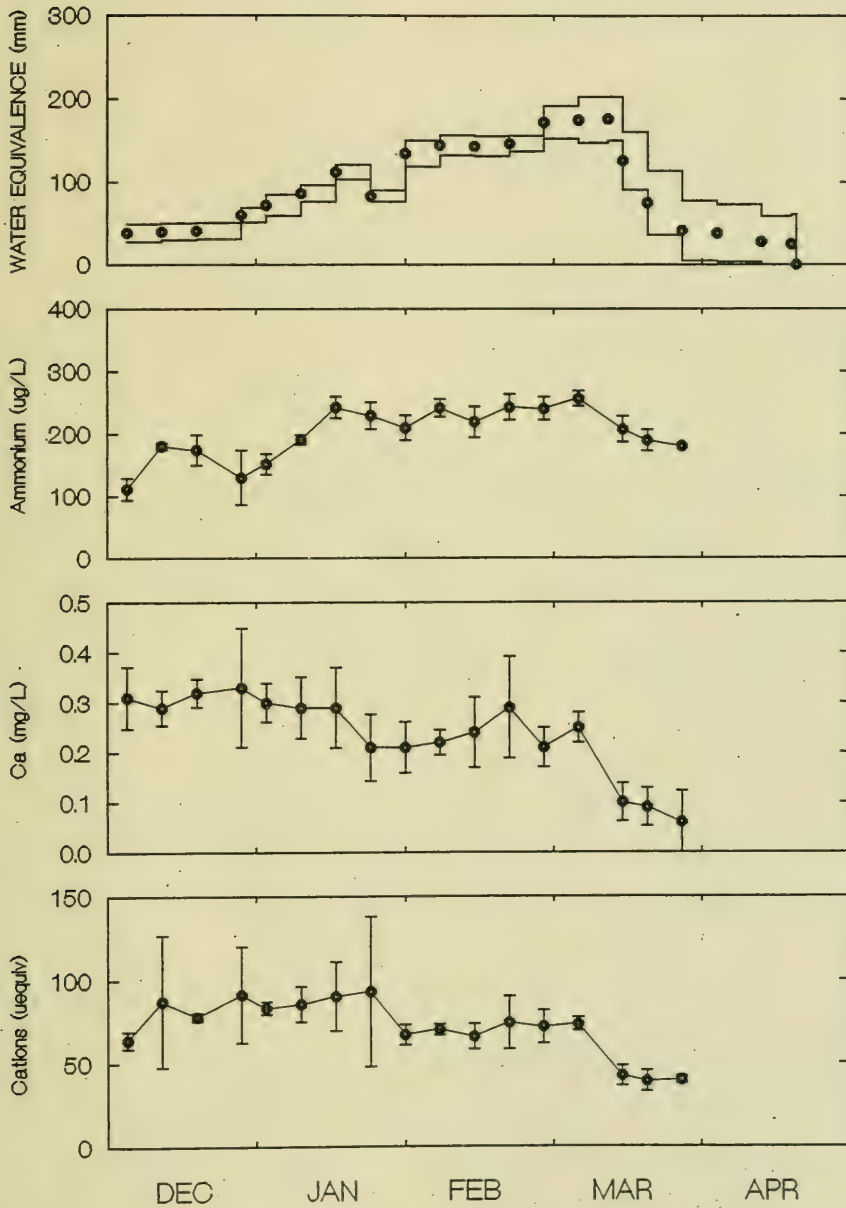


Fig. 4 (cont'd)



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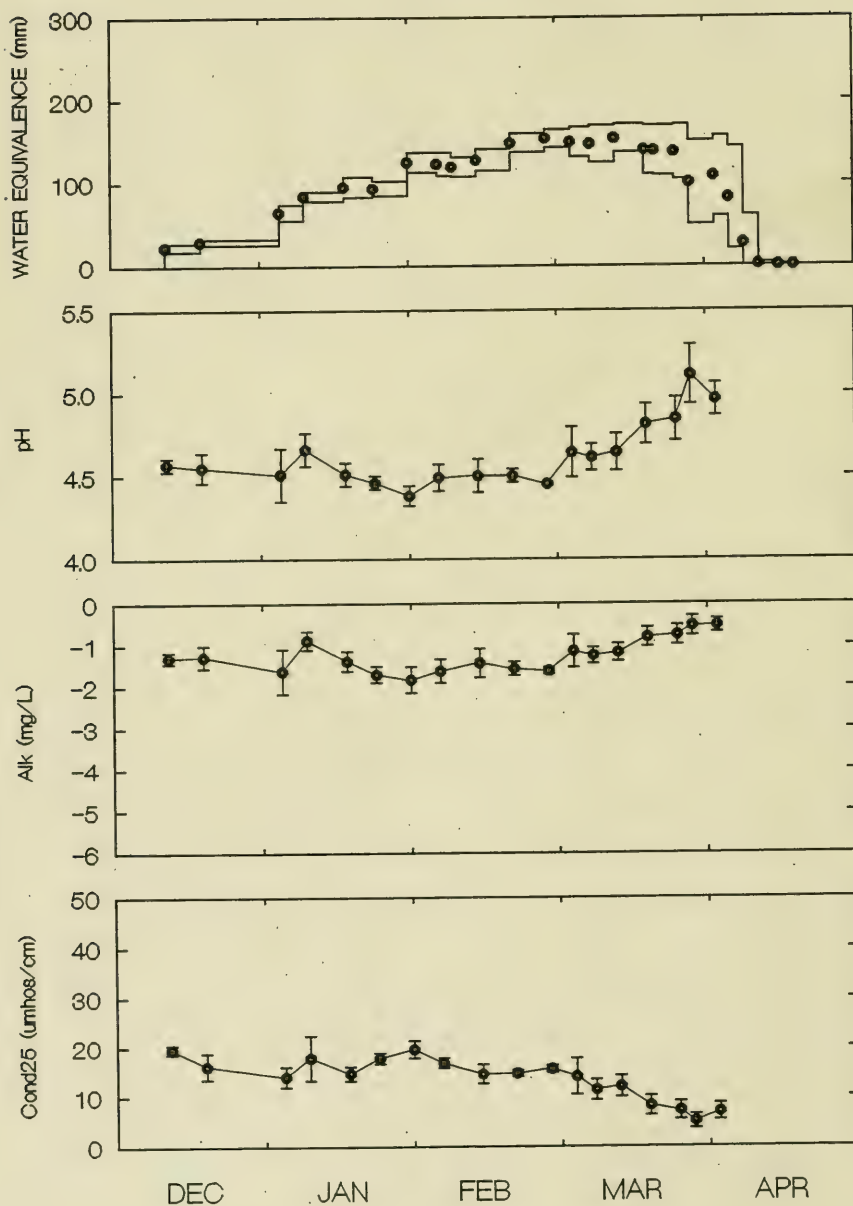


Fig. 5

# HARP LAKE SNOW CHEMISTRY 1990/91

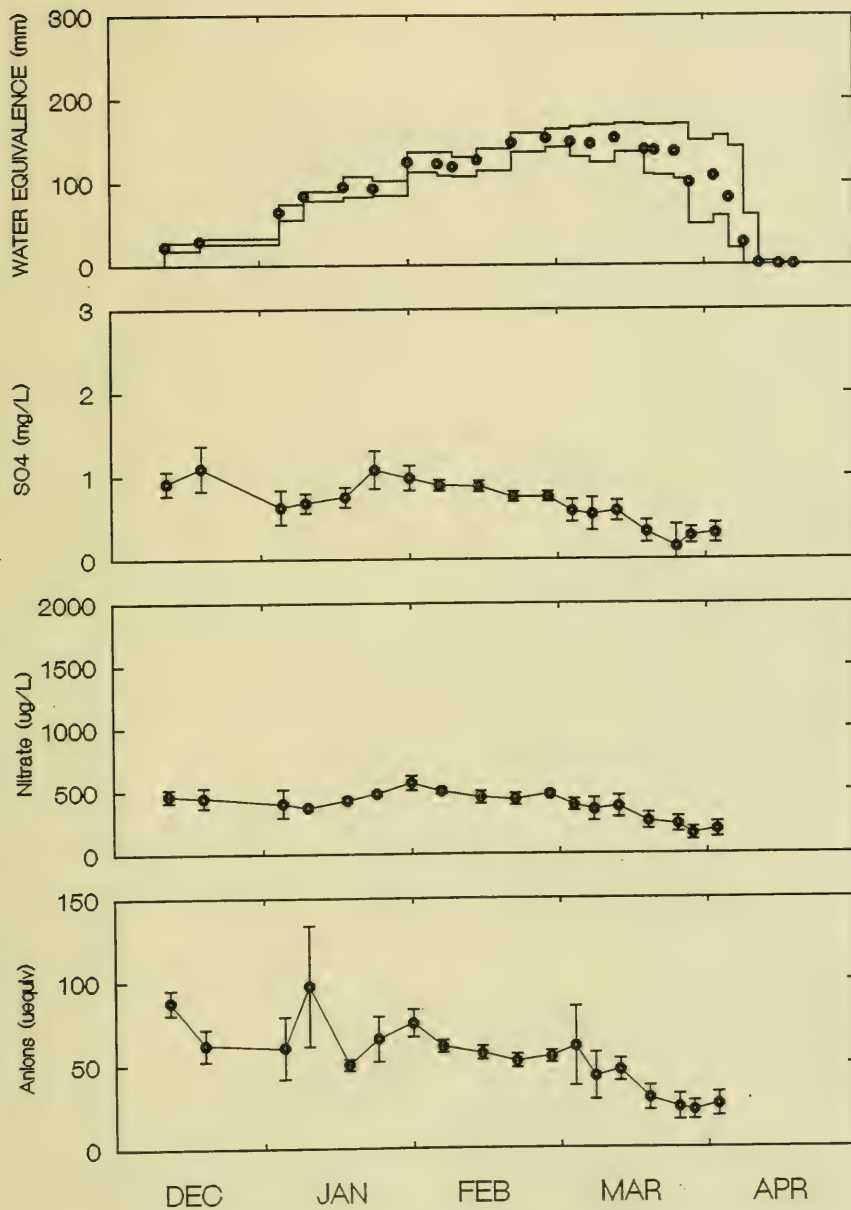


Fig. 5 (cont'd)

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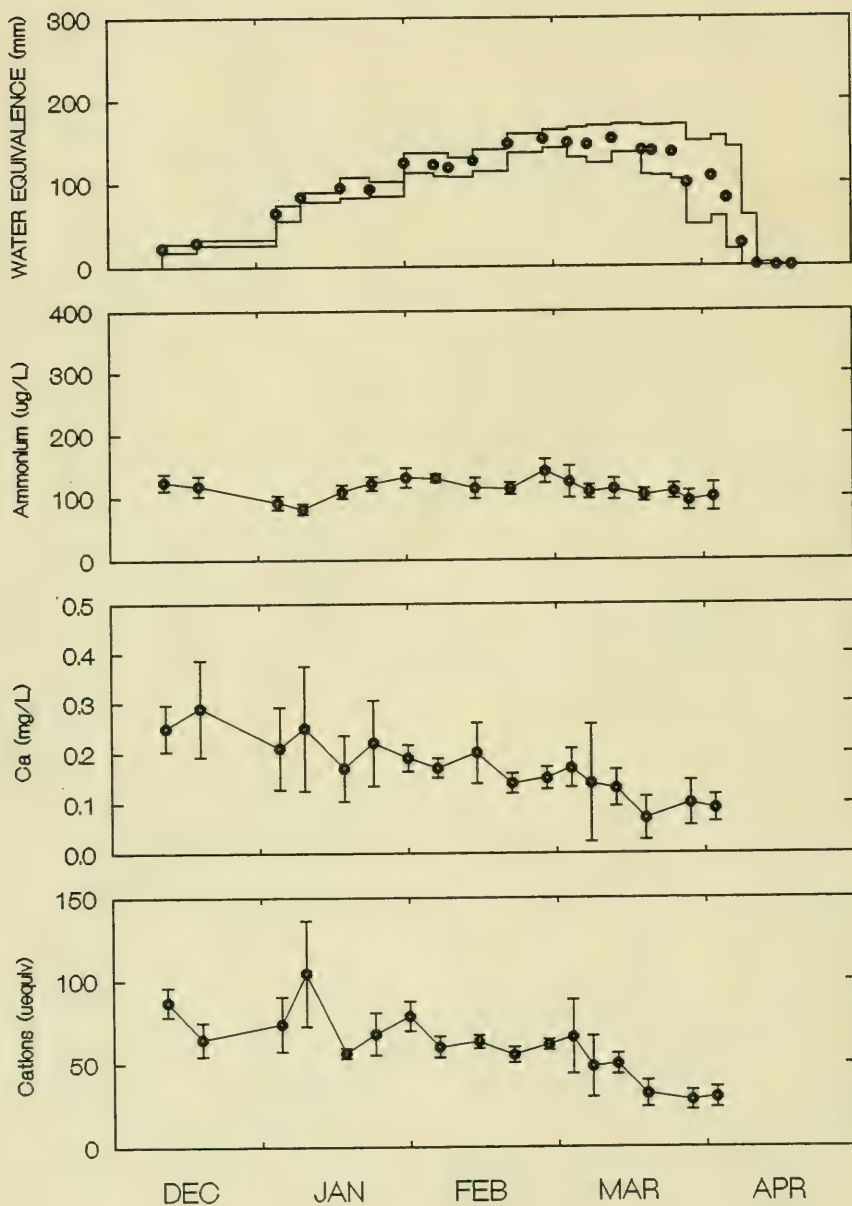


Fig. 5 (cont'd)

# HARP LAKE SNOW CHEMISTRY 1991/92

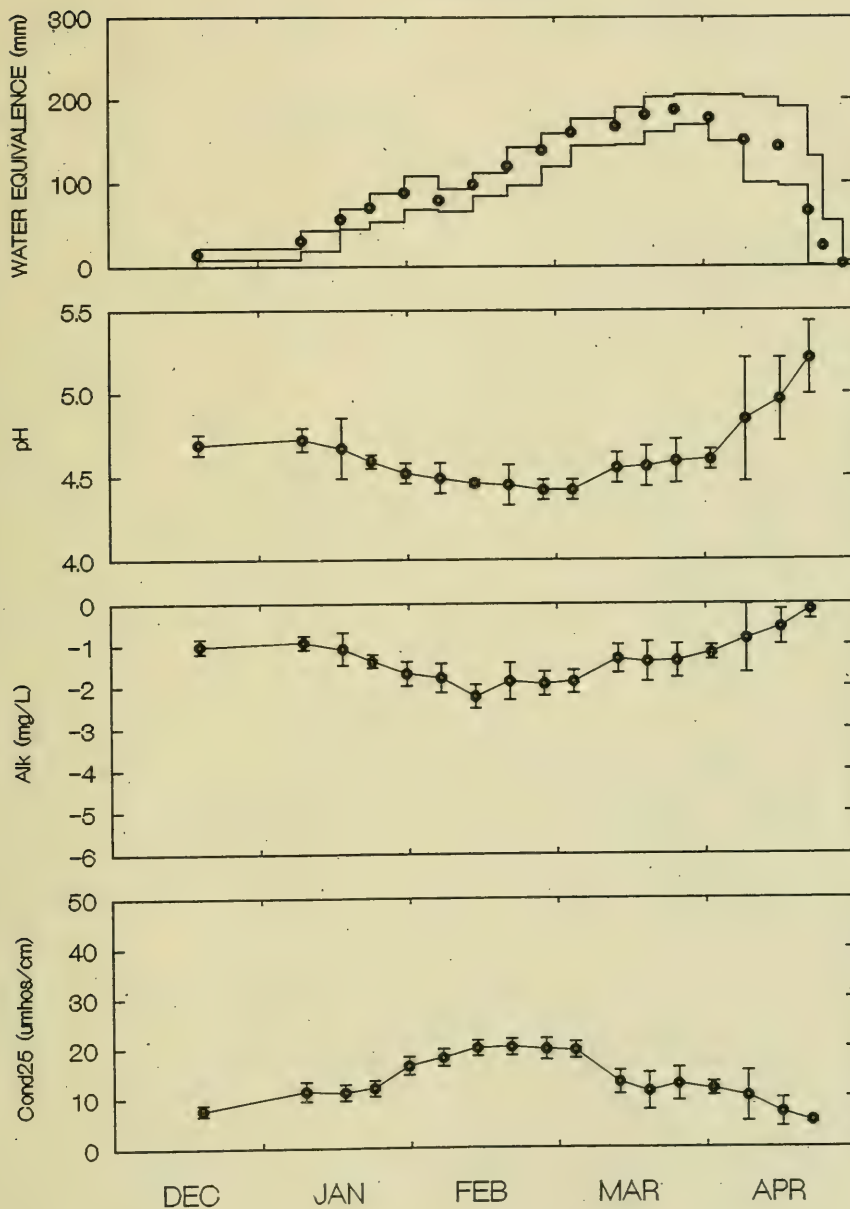


Fig. 6

# HARP LAKE SNOW CHEMISTRY 1991/92

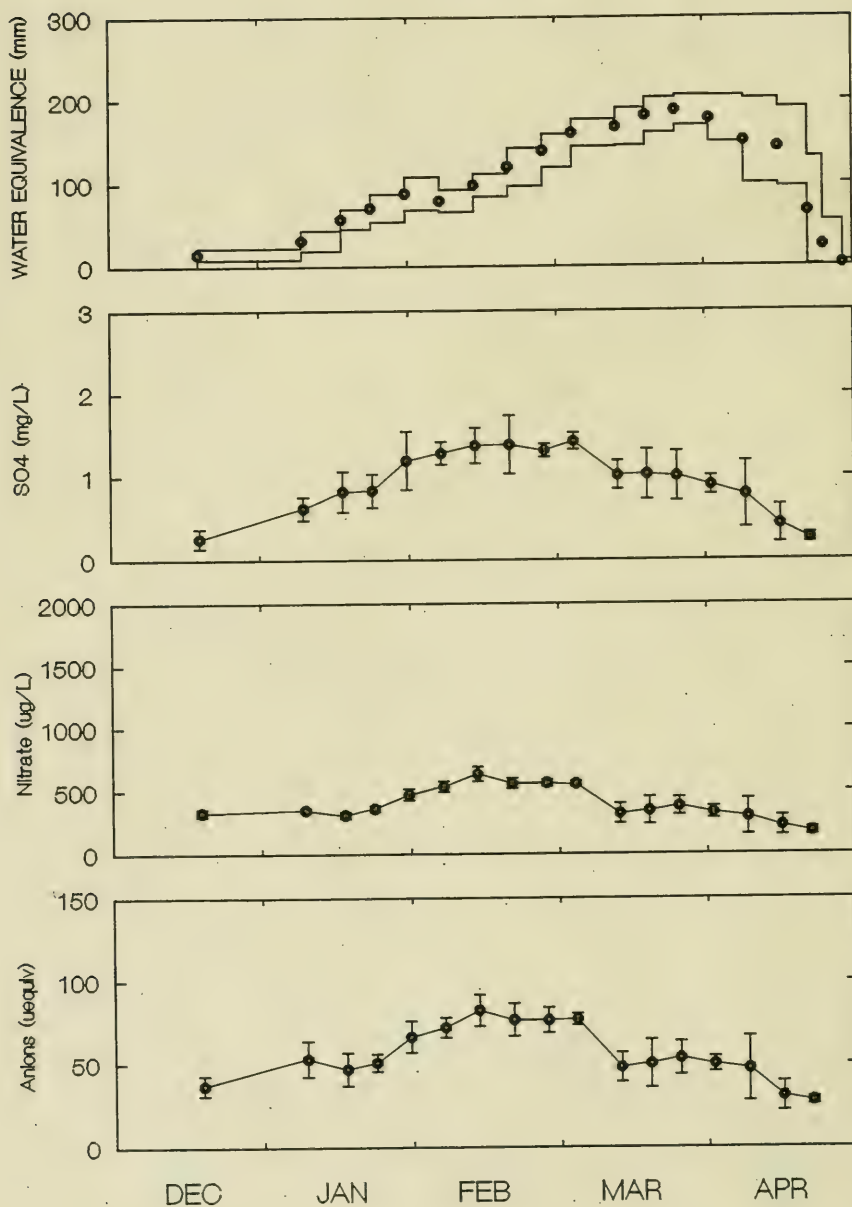


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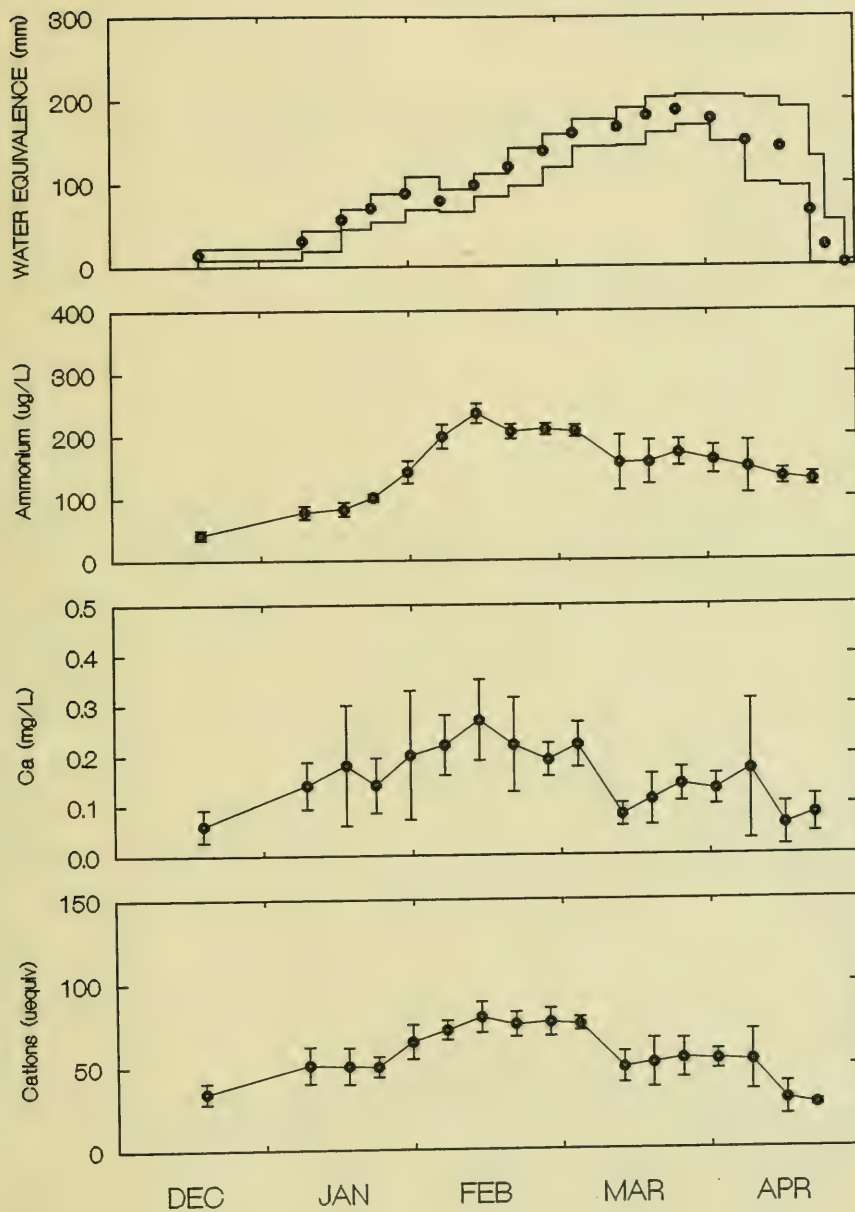


Fig. 6 (cont'd)

# PLASTIC LAKE SNOW CORES MEAN OF SIX STATIONS

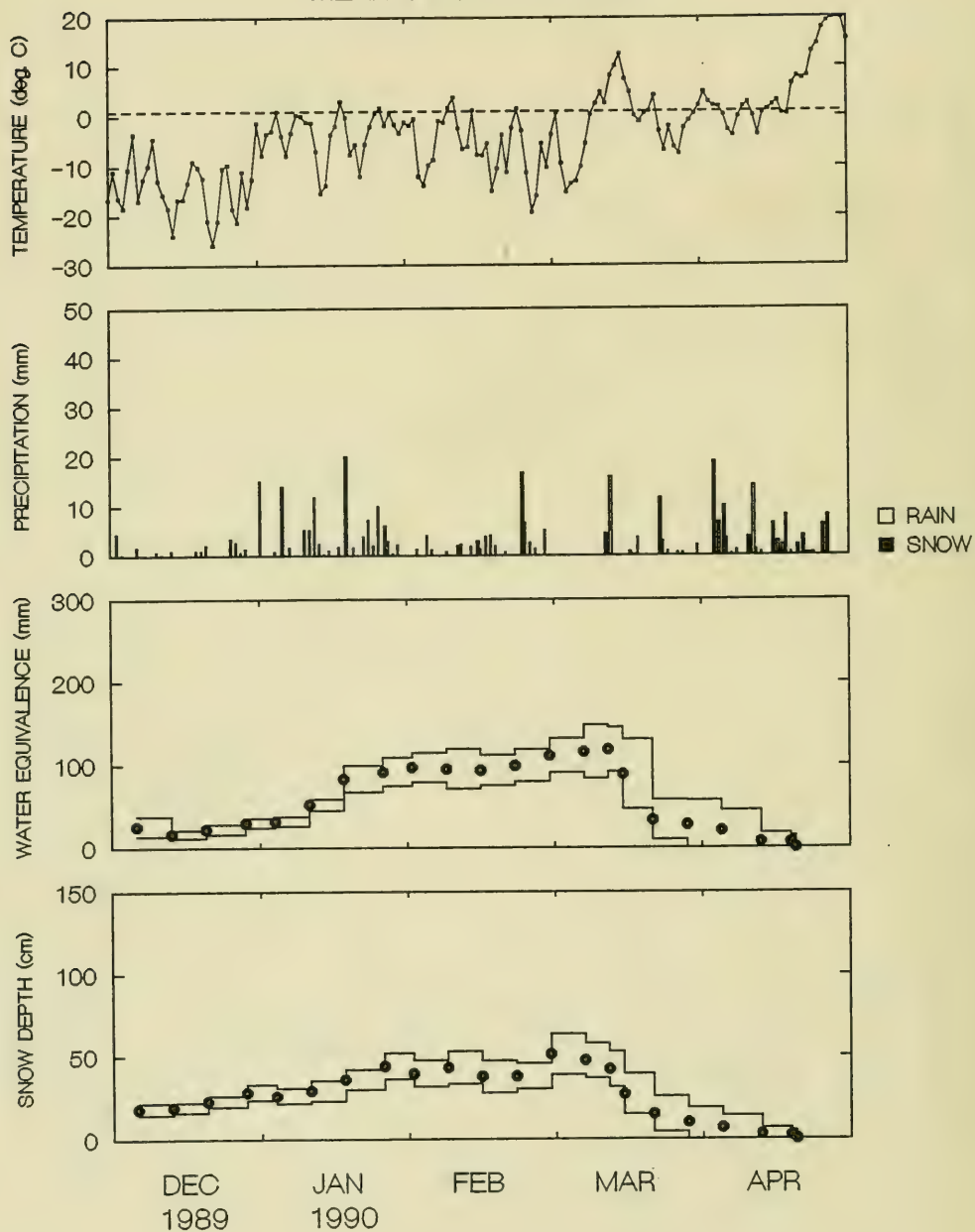


Fig. 7

# PLASTIC LAKE SNOW CORES MEAN OF SIX STATIONS

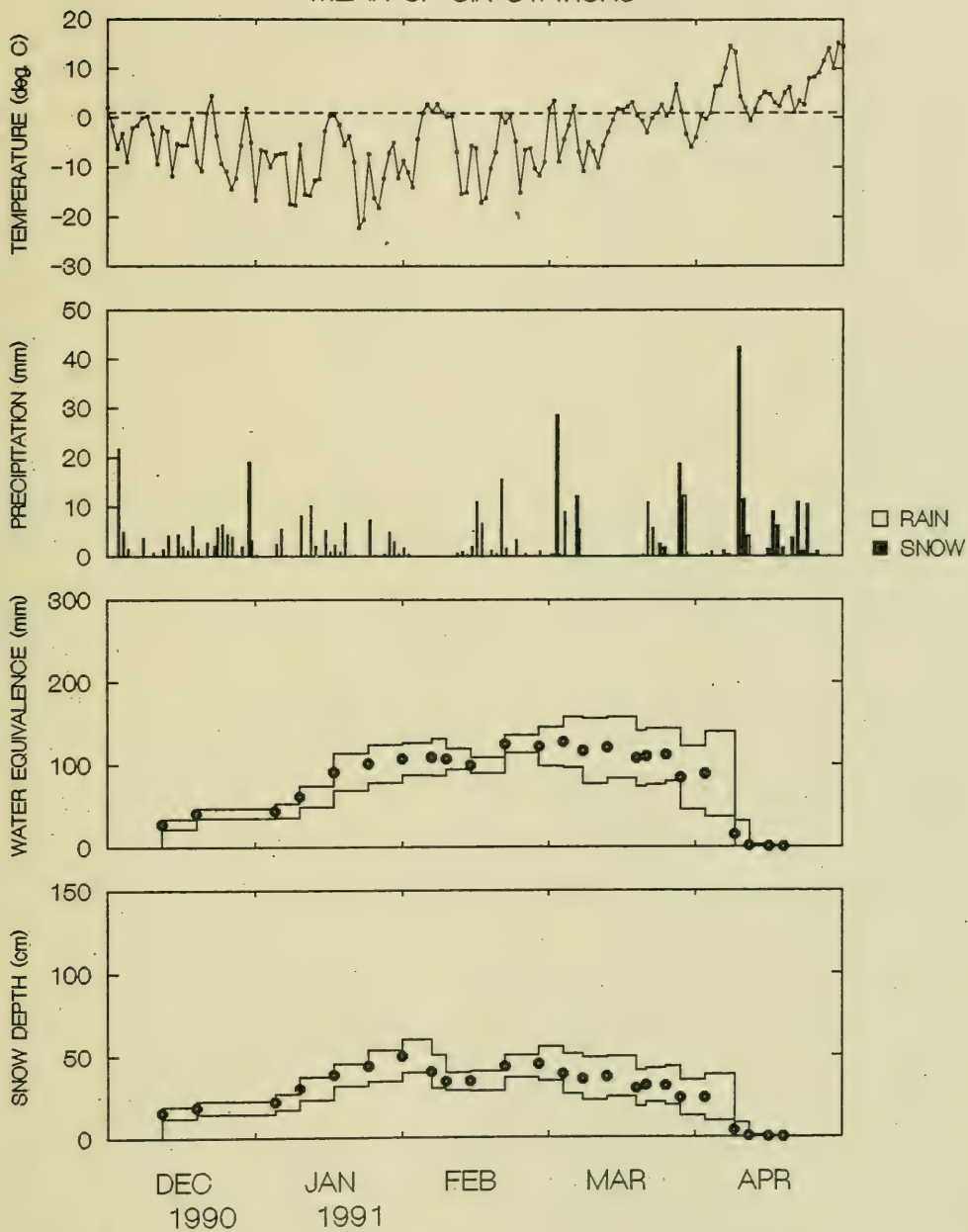


Fig. 8

# PLASTIC LAKE SNOW CORES MEAN OF SIX STATIONS

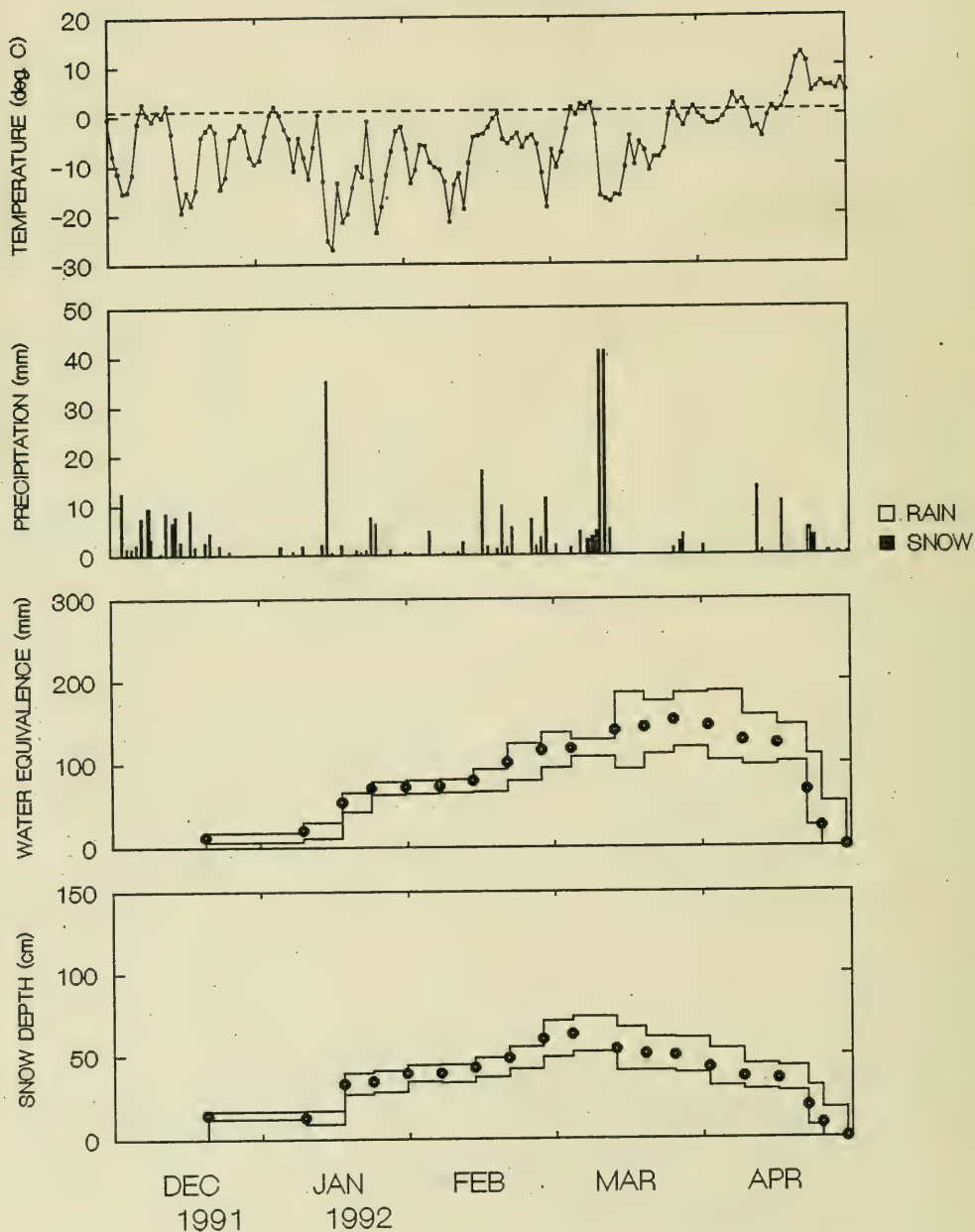


Fig. 9

# HARP LAKE SNOW CORES MEAN OF SIX STATIONS

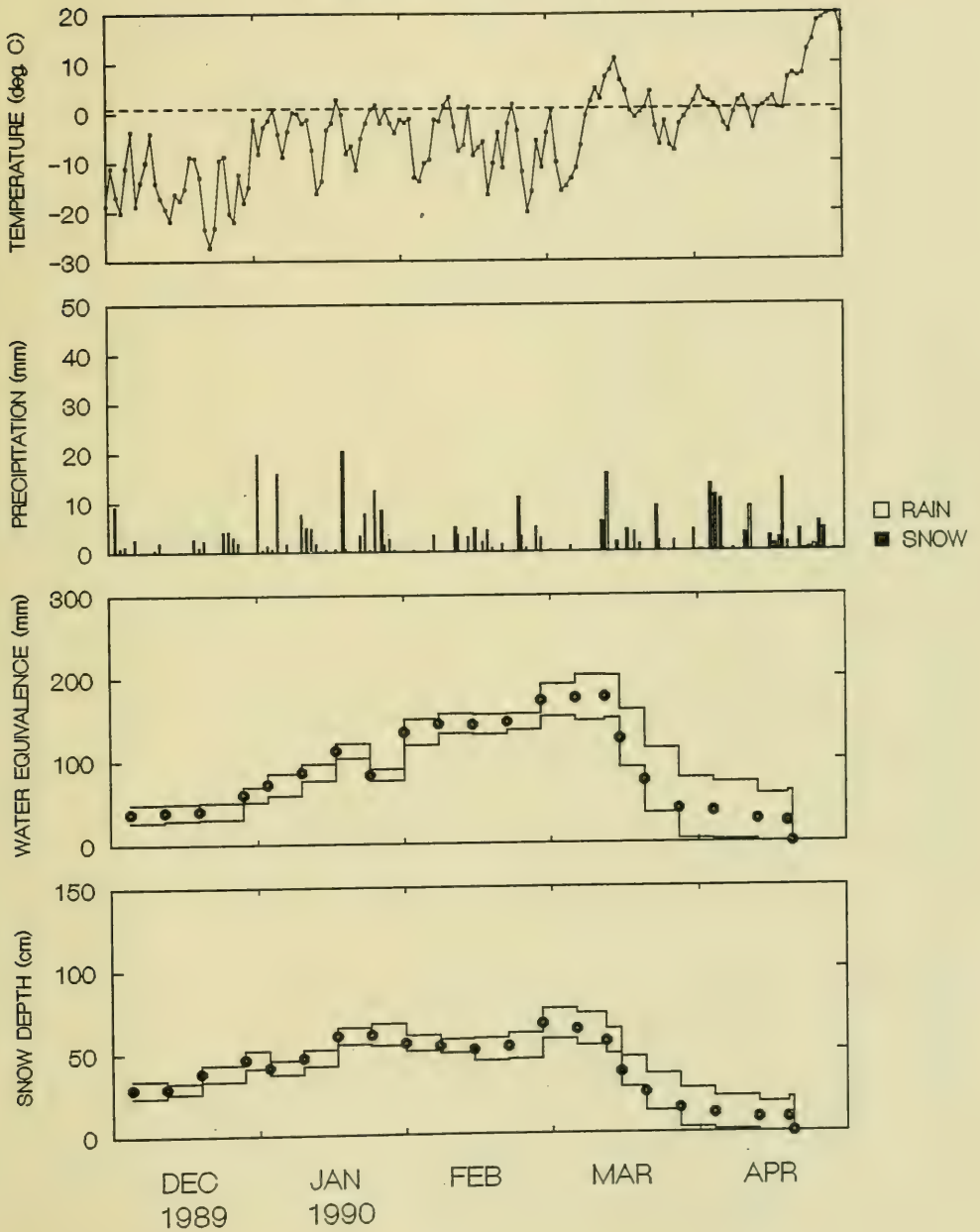


Fig. 10



HARP LAKE SNOW CORES  
MEAN OF SIX STATIONS

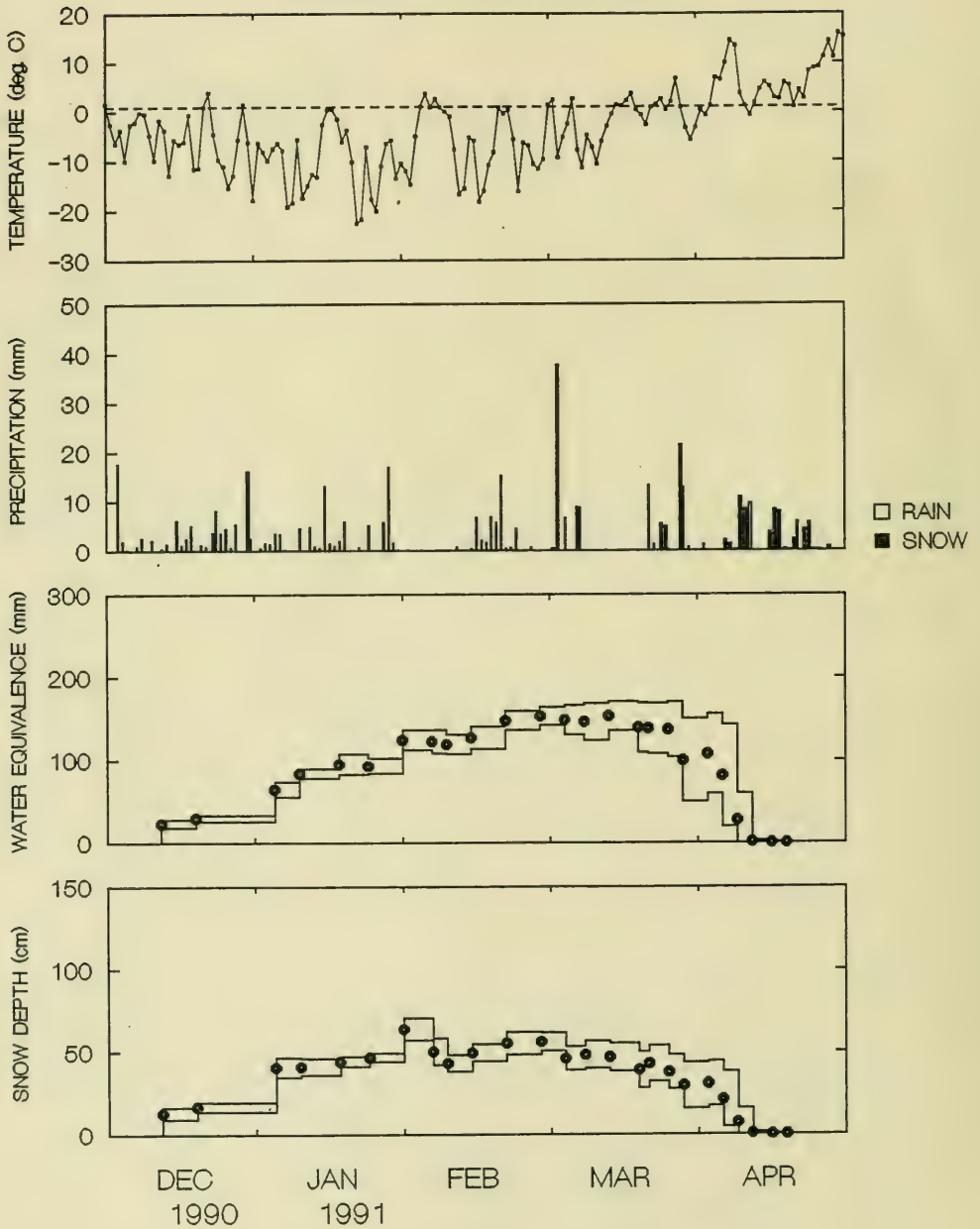


Fig. 11

# HARP LAKE SNOW CORES MEAN OF SIX STATIONS

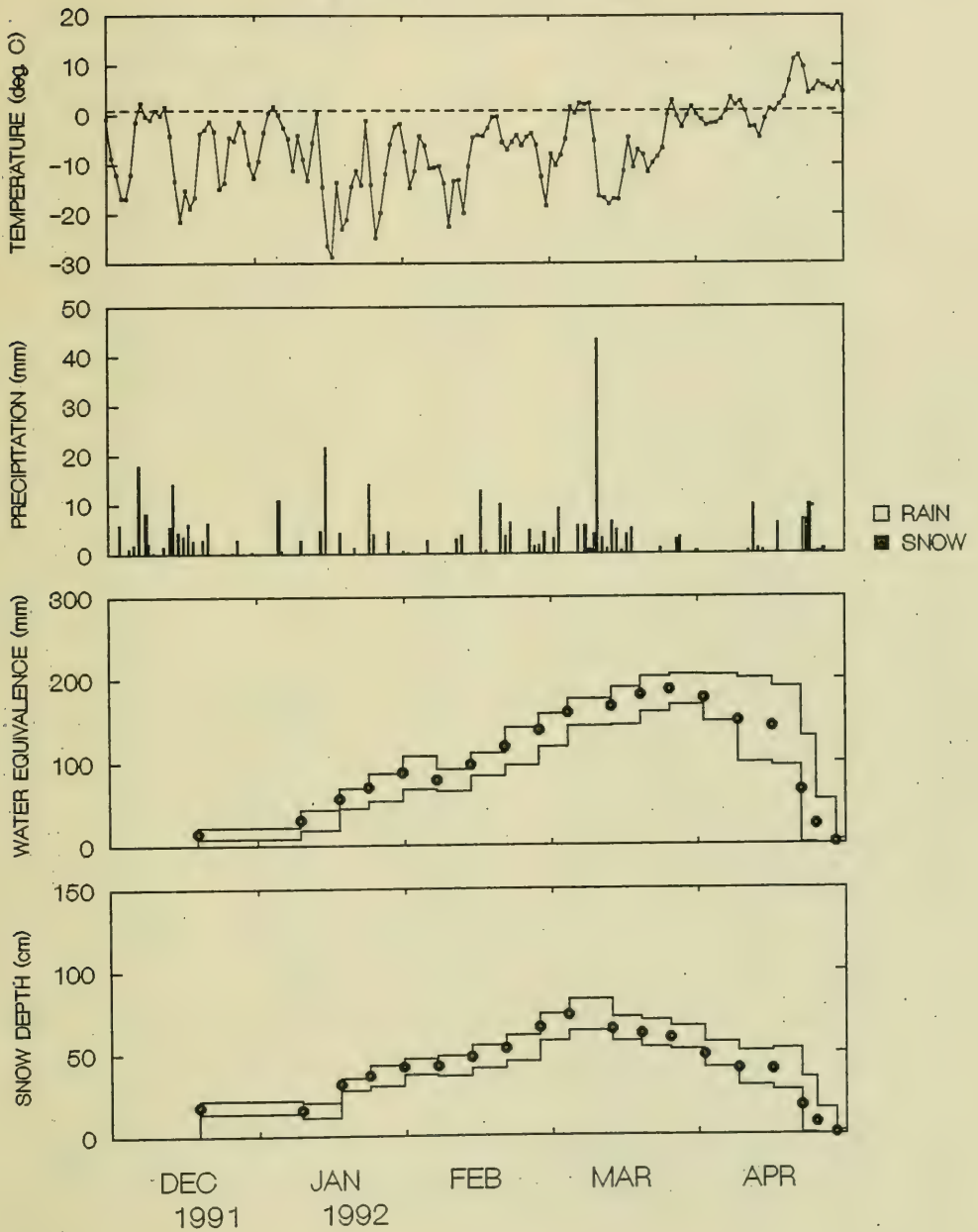


Fig. 12

# PLASTIC LAKE SNOW CORE DATA SUMMARY PCSTII

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		pH	Alk (mg/L)	Cond25 (µmole/cm)	SO4 (µg/L)	Nitrate (µg/L)	Ammonia (µg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	36.0	7.9	95.7	26.5	100	4.58	-1.40	16.4	1.70	69	25	0.34	0.22	0.20	0.07	0.20				
08-FEB-88	43.3	8.3	101.1	27.7	100	4.57	-1.55	16.8	1.45	360	130	0.38	0.20	0.06	0.17	0.17				
22-FEB-88	69.7	10.6	167.6	16.1	100	4.46	-1.90	18.3	1.20	455	160	0.22	0.08	0.04	0.04	0.24				
07-MAR-88	68.0	8.2	162.2	10.3	100	4.59	-1.80	16.7	1.15	545	215	0.32	0.35	0.06	0.20	0.20				
14-MAR-88	28.4	3.7	186.7	30.3	100	4.46	-3.00	19.1	1.25	575	220	0.30	0.68	0.05	0.22	0.05				
28-MAR-88	22.0	3.5	164.5	21.7	100															
30-MAR-88	20.0	3.1	163.0	16.9	100	4.69	-1.30	12.7	0.75	375	170	0.24	0.10	0.03	0.18	0.18				
05-APR-88	14.9	3.0	108.7	9.7	67	4.85	-0.82	8.7	0.55	225	135	0.16	0.08	0.02	0.15	0.15				
07-APR-88	9.9	2.2	79.7	17.5	67															
11-APR-88	7.5	3.0	49.1	37.9	33	4.97	-0.31	7.0	0.30	160	120	0.08	0.07	0.01	0.10	0.10				
15-APR-88	3.8	1.0	15.5	5.8	33															
22-APR-88	7.4	5.8	45.3	52.0	10	5.07	-0.52	6.4	0.55	175	150	0.10	0.05	0.02	0.09	0.09				
28-APR-88	7.5	6.9	53.0	64.5	10															
23-APR-88	0.0	0.0	0.0	0.0	0															
10-JAN-89	29.7	1.5	49.1	4.0	100	4.76	-1.00	11.1	0.90	275	145	0.24	0.08	0.04	0.17	0.22				
24-JAN-89	45.3	2.5	82.8	6.6	100	4.55	-1.20	17.2	1.40	510	260	0.36	0.69	0.07	0.21	0.21				
07-FEB-89	43.0	1.7	85.8	11.9	100	4.50	-1.40	15.0	1.60	480	255	0.46	0.20	0.08	0.27	0.27				
21-FEB-89	65.7	8.7	117.1	30.4	100	4.49	-1.60	20.6	1.65	513	200	0.46	0.10	0.09	0.28	0.28				
07-MAR-89	58.3	4.7	113.3	26.0	100	4.26	-2.40	24.8	1.95	652	232	0.46	0.10	0.09	0.28	0.28				
16-MAR-89	60.0	0.0	101.1	20.5	100															
20-MAR-89	86.3	3.2	170.6	16.0	100	4.38	-2.10	20.0	1.55	635	245	0.36	0.05	0.07	0.22	0.22				
28-MAR-89	55.7	1.5	136.3	24.3	100	4.76	-1.00	10.2	0.45	325	185	0.08	0.04	0.03	0.16	0.16				
31-MAR-89	40.3	1.5	125.6	16.3	100															
03-APR-89	48.3	2.5	126.3	21.8	100	4.95	-0.36	9.7	0.60	272	190	0.16	0.08	0.00	0.22	0.22				
06-APR-89	36.0	4.4	66.7	11.5	100															
10-APR-89	42.7	2.5	129.4	4.6	100	4.93	-0.63	10.0	0.70	272	190	0.22	0.13	0.04	0.14	0.14				
13-APR-89	58.7	2.5	155.4	13.4	100															
18-APR-89	40.3	2.5	130.1	7.0	100	5.11	-0.34	8.1	0.50	260	170	0.16	0.09	0.05	0.17	0.17				
20-APR-89	43.3	3.2	139.3	14.0	100															
24-APR-89	31.0	5.0	114.1	20.8	100															
27-APR-89	20.3	2.1	67.5	9.2	50															
28-APR-89	0.0	0.0	0.0	0.0	0															
06-DEC-89	18.5	0.5	22.4	1.3	100	4.49	-1.30	18.6	1.15	666	216	0.45	0.09	0.18	0.15	0.32	1.30	0.04	0.05	37
13-DEC-89	18.5	0.5	14.0	1.3	100	4.45	-1.20	20.4	1.20	717	240	0.46	0.09	0.23	0.17	0.40	1.10	0.02	0.05	26
20-DEC-89	21.5	1.8	21.6	4.6	100	4.45	-1.40	19.9	1.15	720	172	0.45	0.09	0.38	0.13	0.30	0.90	0.03	0.04	29
28-DEC-89	27.0	1.0	38.4	13.2	100	4.39	-1.70	24.9	1.10	763	212	0.45	0.08	0.12	0.59	0.54	1.90	0.03	0.04	30
03-JAN-90	25.3	4.9	29.3	8.1	100	4.37	-1.80	24.0	1.35	705	223	0.42	0.07	0.17	0.35	0.31	1.20	0.03	0.03	22
10-JAN-90	31.7	1.3	50.7	5.8	100	4.42	-2.10	23.5	1.30	660	218	0.36	0.06	0.19	0.17	0.35	0.90	0.02	0.03	23
25-JAN-90	35.0	2.0	75.1	2.6	100	4.39	-2.50	24.7	1.65	670	299	0.38	0.05	0.14	0.15	0.24	1.10	0.03	0.02	30
31-JAN-90	44.8	1.9	97.3	8.3	100	4.45	-2.00	20.0	1.00	580	250	0.20	0.03	0.10	0.68	0.20	0.80	0.05	0.01	38
14-FEB-90	39.2	0.3	91.2	3.5	100	4.41	-2.10	21.5	1.20	660	260	0.23	0.04	0.10	0.67	0.20	0.90	0.02	0.01	23
07-FEB-90	45.7	4.5	98.0	5.8	100	4.55	-1.40	17.2	0.95	487	246	0.20	-0.03	0.10	0.07	0.15	0.80	0.03	0.02	26
14-FEB-90	37.0	2.6	80.5	5.8	100	4.59	-1.60	17.9	1.15	534	240	0.27	0.05	0.17	0.07	0.18	1.00	0.04	0.04	36
21-FEB-90	52.0	0.7	108.0	10.3	100	4.47	-1.90	20.8	1.35	617	267	0.39	0.06	0.18	0.09	0.21	1.30	0.05	0.06	46
28-FEB-90	48.5	3.0	125.6	7.4	100	4.51	-1.70	17.3	1.20	486	222	0.22	0.05	0.13	0.09	0.19	0.70	0.03	0.05	26
07-MAR-90	40.7	3.2	124.0	21.7	100	4.49	-1.80	19.9	1.55	533	236	0.34	0.06	0.18	0.11	0.23	1.30	0.03	0.06	26
12-MAR-90	22.3	2.3	72.1	0.0	100	4.84	-0.85	10.7	0.65	374	240	0.15	0.04	0.18	0.08	0.21	1.30	0.04	0.03	37

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D.	MEAN (mm)	S.D.		PH	Alk (mg/L)	Cond25 (umhos/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
21-MAR-90	21.0	2.6	57.5	3.5	90	4.87	-0.73	8.3	0.35	298	180	0.06	0.02	0.08	0.08	0.18	0.50	0.04	0.01	39
28-MAR-90	13.7	3.1	30.8	10.5	75															
04-APR-90	11.3	1.0	33.1	4.0	50															
12-APR-90	8.8	1.6	20.1	4.8	25															
18-APR-90	8.7	4.0	21.6	20.6	25															
19-APR-90	0.0	0.0	0.0	0.0	0															
12-DEC-90	14.3	1.2	26.2	4.0	100	4.57	-1.30	15.0	0.80	390	114	0.16	0.03	0.10	0.26	0.34	0.60	0.02	0.00	21
19-DEC-90	19.7	2.3	42.3	6.1	100	4.25	-2.60	16.9	1.15	418	120	0.24	0.05	0.15	0.10	0.27	1.10	0.03	0.03	21
04-JAN-91	19.3	2.3	42.3	6.1	100	4.59	-1.30	14.2	0.80	305	101	0.18	0.04	0.18	0.54	0.86	1.20	0.06	0.02	40
06-JAN-91	28.3	1.5	63.7	1.3	100	4.44	-1.50	14.6	0.65	421	81	0.16	0.03	0.13	0.14	0.19	0.90	0.04	0.01	27
19-JAN-91	42.0	3.6	87.3	9.5	100	4.25	-2.60	17.2	0.70	546	107	0.18	0.04	0.25	0.08	0.14	1.20	0.02	0.03	17
23-JAN-91	45.0	2.6	94.2	9.3	100	4.40	-1.60	17.5	1.00	416	107	0.20	0.03	0.13	0.32	0.54	1.10	0.05	0.01	34
30-JAN-91	51.5	9.0	106.4	16.0	100	4.41	-1.80	21.2	1.05	590	136	0.25	0.04	0.07	0.57	0.92	1.10	0.07	0.01	44
05-FEB-91	39.7	4.8	98.0	16.9	100	4.51	-1.40	16.3	1.05	462	128	0.21	0.04	0.12	0.24	0.40	0.90	0.04	0.01	27
08-FEB-91	38.8	4.4	113.3	0.0	100															
13-FEB-91	36.7	0.6	108.7	6.1	100	4.59	-1.10	13.3	0.95	384	151	0.22	0.05	0.21	0.15	0.26	1.60	0.02	0.02	21
20-FEB-91	49.0	3.6	143.1	10.5	100	4.55	-1.40	14.4	0.85	400	116	0.18	0.04	0.13	0.07	0.13	1.20	0.04	0.03	34
27-FEB-91	48.3	1.0	125.6	10.8	100	4.46	-1.60	16.3	0.85	495	137	0.20	0.04	0.14	0.14	0.24	0.90	0.04	0.01	38
04-MAR-91	49.3	2.3	133.8	8.1	100	4.70	-1.00	11.5	0.55	339	122	0.12	0.03	0.11	0.21	0.37	0.80			
08-MAR-91	32.7	1.2	95.7	2.6	100	4.59	-1.20	12.6	0.65	350	110	0.12	0.02	0.09	0.06	0.14	1.10			
13-MAR-91	44.7	1.6	138.4	18.7	100	4.70	-0.99	10.3	0.50	290	95	0.12	0.03	0.11	0.10	0.20	1.10			
19-MAR-91	31.5	10.8	108.0	42.6	100	4.84	-0.70	7.7	0.40	224	112	0.07	0.02	0.10	0.09	0.18	0.60			
21-MAR-91	29.5	4.2	88.9	8.7	100															
25-MAR-91	31.7	1.5	108.0	3.5	100	4.85	-0.61	7.7	0.55	204	135						0.90			
28-MAR-91	26.5	4.9	78.9	22.1	100	5.12	-0.53	5.0	0.25	142	106	0.08	0.02	0.10	0.10	0.12	0.80			
02-APR-91	29.5	3.3	110.3	9.3	100	4.99	-0.46	6.9	0.35	156	115	0.07	0.02	0.10	0.15	0.28	1.00			
08-APR-91	14.0	2.0	50.7	18.5	60															
11-APR-91	8.5	1.3	23.1	1.3	10															
15-APR-91	0.0	0.0	0.0	0.0	0															
20-DEC-91	13.7	0.6	10.2	2.3	100	4.67	-1.10	14.3	0.31	402	41	0.05	0.01	0.02	0.82	1.31	0.40	0.01	0.00	4
09-JAN-92	11.8	1.6	23.1	5.3	100	4.53	-1.50	15.3	0.90	476	125	0.14	0.04	0.23	0.18	0.38	1.50	0.07	0.03	
17-JAN-92	34.0	0.9	62.9	4.6	100	4.53	-1.40	14.4	1.00	370	128	0.12	0.03	0.12	0.10	0.21	0.80	0.04	0.02	13
23-JAN-92	38.8	1.0	72.1	4.0	100	4.47	-1.70	17.0	1.15	438	156	0.12	0.03	0.10	0.20	0.36	1.10	0.06	0.01	15
30-JAN-92	42.3	3.5	68.2	23.1	100	4.40	-2.20	19.1	1.45	530	180	0.17	0.04	0.11	0.10	0.20	1.70	0.04	0.02	6
06-FEB-92	43.3	0.8	79.7	7.4	100	4.38	-2.30	22.6	1.75	637	310	0.21	0.04	0.19	0.09	0.21	1.30	0.03	0.03	6
13-FEB-92	46.2	1.8	88.3	6.6	100	4.39	-2.50	21.7	1.55	623	305	0.17	0.04	0.17	0.13	0.24	1.30	0.05	0.02	13
20-FEB-92	50.7	2.3	108.7	8.1	100	4.45	-1.80	19.2	1.35	532	260	0.19	0.04	0.13	0.10	0.20	1.30	0.08	0.02	4
27-FEB-92	65.5	2.3	120.2	8.3	100	4.38	-2.10	23.3	1.80	643	308	0.24	0.05	0.09	0.30	0.52	1.30	0.12	0.02	16
04-MAR-92	64.3	4.7	113.3	11.6	100	4.57	-1.20	18.0	1.75	430	210	0.36	0.06	0.22	0.10	0.22	1.90	0.13	0.03	12
11-MAR-92	59.0	1.0	163.3	5.1	100	4.53	-1.40	14.1	1.20	355	190	0.21	0.03	0.12	0.07	0.15	1.40	0.07	0.02	11
19-MAR-92	52.2	3.0	139.3	9.5	100	4.59	-1.10	14.5	1.80	370	209	0.52	0.06	0.11	0.06	0.14	2.60	0.14	0.03	8
25-MAR-92	50.7	8.0	156.3	24.3	100	4.62	-1.20	12.0	1.00	352	205	0.14	0.02	0.06	0.07	0.18	0.90	0.06	0.01	14
01-APR-92	51.8	2.3	176.0	13.2	100	4.69	-1.00	9.0	0.75	261	176	0.08	0.02	0.06	0.08	0.14	0.80	0.06	0.01	14
08-APR-92	39.3	0.3	145.4	6.9	100	4.87	-0.67	6.3	0.40	224	186	0.04	0.01	0.04	0.12	0.27	0.30	0.04	0.01	10
15-APR-92	36.5	3.8	134.0	16.0	100	5.17	-0.30	5.8	0.35	220	195	0.05	0.01	0.04	0.04	0.14	0.20	0.02	0.01	13
21-APR-92	27.7	3.3	98.0	11.3	100															
24-APR-92	22.7	3.2	50.5	43.3	75															
28-APR-92	0.0	0.0	0.0	0.0	0															

Table 1 (cont'd)

# PLASTIC LAKE SNOW CORE DATA SUMMARY PCST14

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D.	MEAN (mm)	S.D.		PH	Alk (meq/l)	Cond25 (umsc/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	33.8	3.6	78.9	32.1	100	4.38	-1.50	16.3	1.35	425	160	0.30	0.16	0.10	0.06	0.16				
08-FEB-88	34.3	0.6	82.0	13.2	100	4.90	-0.73	12.8	0.85	405	150	0.24	0.04	0.07	0.04	0.16				
12-FEB-88	61.0	3.5	137.0	21.3	100	4.76	-1.00	20.9	0.85	420	171	0.28	0.04	0.14	0.05	-999.00				
07-MAR-88	61.0	1.7	132.3	10.5	100	4.50	-2.20	18.4	1.23	645	240	0.42	0.06	0.07	0.06	0.28				
14-MAR-88	24.6	1.7	172.9	13.8	100	4.44	-2.90	18.4	1.63	595	235	0.38	0.19	0.06	0.06	0.24				
28-MAR-88	16.7	0.7	137.0	7.0	100	4.71	-1.20	11.5	0.60	395	175	0.12	0.07	0.02	0.02	0.18				
30-MAR-88	15.7	1.4	137.8	23.1	100															
05-APR-88	7.7	0.1	61.4	5.8	67	4.97	-0.65	5.9	0.35	135	120	0.06	0.11	0.01	0.01	0.13				
07-APR-88	3.2	0.6	18.6	6.6	33															
11-APR-88	3.7	0.6	17.8	4.8	33	4.96	-0.69	6.6	0.35	135	115	0.16	0.10	0.02	0.02	0.10				
15-APR-88	1.9	1.3	4.8	6.6	7.5															
10-JAN-89	19.7	2.1	34.6	6.6	100	4.67	-1.00	11.7	0.90	290	160	0.24	0.05	0.05	0.05	0.25				
24-JAN-89	32.3	3.5	62.9	6.1	100	4.56	-1.30	17.0	1.40	485	265	0.38	0.09	0.07	0.07	0.23				
07-FEB-89	36.0	3.5	80.5	22.3	100	4.55	-1.20	14.8	1.65	500	295	0.42	0.19	0.10	0.10	0.24				
21-FEB-89	60.0	4.4	96.5	11.3	100	4.45	-1.50	19.2	1.60	539	245	0.50	0.16	0.09	0.09	0.30				
07-MAR-89	63.0	1.0	139.3	16.3	100	4.42	-1.90	22.6	1.70	652	250	0.46	0.14	0.09	0.09	0.30				
16-MAR-89	55.7	2.5	97.7	21.7	100															
28-MAR-89	76.3	1.5	147.7	4.6	100	4.46	-1.50	18.3	1.35	550	225	0.34	0.10	0.07	0.07	0.31				
31-MAR-89	49.0	1.0	130.1	22.5	100	4.80	-0.79	13.6	1.00	455	185	0.36	0.23	0.10	0.10	0.24				
03-APR-89	37.3	0.6	69.0	26.5	100															
06-APR-89	38.0	1.0	124.8	8.3	100	5.39	0.00	10.7	0.85	297	167	0.56	0.12	0.08	0.07	0.04				
10-APR-89	39.5	0.9	125.6	4.8	100	5.08	-0.48	8.9	0.65	257	205	0.32	0.07	0.04	0.12	0.08				
13-APR-89	53.3	3.5	145.4	22.6	100															
18-APR-89	38.3	5.7	119.4	11.8	100	5.98	0.53	6.9	0.30	200	130	0.18	0.05	0.02	0.13	0.05				
20-APR-89	36.3	1.4	121.0	14.7	100															
24-APR-89	32.0	5.0	106.5	26.0	100	5.07	-0.66	7.0	0.40	205	165	0.16	0.08	0.03	0.16	0.08				
27-APR-89	22.0	3.6	72.8	19.1	30															
01-MAY-89	12.3	1.5	41.5	9.3	15															
02-MAY-89	0.0	0.0	0.0	0.0	0															
6-DEC-89	15.8	1.3	20.9	3.5	100	4.55	-1.10	15.8	0.90	528	198	0.38	0.06	0.15	0.09	0.20	1.00	0.04	0.04	35
13-DEC-89	18.7	1.4	16.3	2.6	100	4.52	-1.00	16.8	1.10	491	220	0.41	0.08	0.20	0.14	0.28	1.10	0.04	0.03	32
20-DEC-89	22.0	1.7	23.9	2.3	100	4.45	-1.40	19.1	1.00	680	227	0.38	0.07	0.12	0.13	0.26	0.40	0.04	0.03	139
28-DEC-89	25.0	1.0	31.6	4.8	100	4.52	-1.20	21.3	1.05	734	141	0.51	0.14	0.24	0.37	0.69	1.50	0.03	0.07	26
03-JAN-90	20.8	0.8	27.0	14.9	100	4.27	-2.30	29.2	1.85	792	225	0.50	0.08	0.21	0.41	1.20	0.66	0.03	0.03	45
10-JAN-90	22.5	0.5	47.6	13.2	100	3.60	-14.00	115.8	1.45	3850	249	0.40	0.07	0.18	0.13	0.32	1.20	0.04	0.03	33
17-JAN-90	31.3	2.9	67.5	2.3	100	4.41	-2.50	23.9	2.00	670	378	0.36	0.08	0.27	0.18	0.32	1.20	0.03	0.05	39
25-JAN-90	37.0	1.0	74.3	9.2	100	4.43	-2.10	22.3	1.30	670	260	0.28	0.05	0.12	0.09	0.22	0.90	0.03	0.02	23
31-JAN-90	33.3	2.5	85.0	8.1	100	4.45	-1.70	21.3	1.35	610	250	0.31	0.06	0.14	0.09	0.26	1.50	0.05	0.03	35
07-FEB-90	35.0	2.0	85.0	6.6	100	4.57	-1.40	17.5	1.05	520	266	0.25	0.05	0.15	0.09	0.20	0.90	0.04	0.02	38
14-FEB-90	28.7	2.5	85.0	5.3	100	4.63	-1.40	15.4	0.95	478	237	0.24	0.05	0.14	0.09	0.19	0.70	0.06	0.02	45
21-FEB-90	32.0	2.6	79.7	4.8	100	4.58	-1.40	17.1	1.10	569	247	0.29	0.06	0.17	0.09	0.19	1.10	0.05	0.02	47
28-FEB-90	38.5	0.5	95.7	6.6	100	4.57	-1.40	14.6	0.75	396	189	0.16	0.05	0.12	0.10	0.18	1.30	0.05	0.02	39
07-MAR-90	36.0	5.3	76.6	20.6	100	4.38	-1.50	17.3	1.05	492	218	0.24	0.05	0.15	0.13	0.22	1.00	0.04	0.01	39
12-MAR-90	34.3	2.1	104.2	6.1	100															
15-MAR-90	19.0	1.0	61.4	13.0	100	4.85	-0.67	9.2	0.45	354	220	0.10	0.02	0.12	0.07	0.19	0.80	0.05	0.01	40
21-MAR-90	18.8	0.8	33.8	11.8	75	4.88	-0.78	8.2	0.35	293	195	0.08	0.02	0.15	0.09	0.20	0.80	0.07	0.01	69
28-MAR-90	16.8	1.8	38.4	6.6	75															



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS															
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (umhos/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)	
04-APR-90	12.2	0.3	33.8	10.8	50	4.68	-1.00	13.8	0.65	296	88	0.19	0.03	0.05	0.69	1.05	0.50	0.04	0.01	36	
12-APR-90	9.0	1.7	20.9	6.6	25	4.41	-1.80	23.4	1.70	566	138	0.38	0.06	0.11	0.21	0.36	0.80	0.03	0.02	27	
18-APR-90	8.5	1.0	17.0	6.9	23	4.62	-1.30	12.1	0.75	306	90	0.17	0.03	0.14	0.11	0.20	1.30	0.09	0.02	62	
19-APR-90	0.0	0.0	0.0	0.0	0	4.47	-1.50	12.3	0.60	330	74	0.16	0.04	0.11	0.15	0.22	1.60	0.04	0.02	33	
12-DEC-90	12.7	0.6	27.0	1.3	100	4.55	-1.30	13.2	0.65	377	105	0.07	0.09	0.13	0.09	0.13	0.50	0.04	0.01	34	
04-JAN-91	19.3	1.5	41.5	7.4	100	4.25	-2.70	27.2	1.50	743	137	0.29	0.05	0.15	0.14	0.21	1.20	0.04	0.02	29	
16-JAN-91	30.3	1.2	83.5	15.0	100	4.47	-1.60	20.2	1.25	547	143	0.33	0.06	0.10	0.49	0.77	0.70	0.09	0.02	59	
23-JAN-91	36.2	1.8	88.1	5.8	100	4.47	-1.70	17.7	1.25	499	143	0.25	0.05	0.11	0.11	0.22	0.80	0.04	0.02	30	
03-FEB-91	36.5	0.5	101.9	2.3	100	4.55	-1.30	12.4	0.85	361	123	0.16	0.03	0.07	0.09	0.16	0.60	0.03	0.01	22	
08-FEB-91	32.0	0.9	101.1	4.8	100	4.32	-1.30	16.2	1.05	448	113	0.21	0.04	0.08	0.08	0.16	0.70	0.06	0.01	46	
20-FEB-91	39.3	2.5	117.9	2.3	100	4.58	-1.60	15.0	0.80	434	123	0.18	0.04	0.06	0.25	0.42	1.00	0.05	0.01	34	
02-MAR-91	35.8	0.8	101.5	1.8	100	4.69	-1.00	11.5	0.30	316	118	0.10	0.03	0.17	0.08	0.16	1.10				
04-MAR-91	34.3	2.1	122.5	1.3	100	4.73	-0.90	10.3	0.50	315	120	0.11	0.03	0.17	0.08	0.16	1.10				
13-MAR-91	31.7	0.6	114.9	1.3	100	4.69	-1.00	10.4	0.45	290	95	0.09	0.03	0.07	0.14	0.25	1.00				
19-MAR-91	30.0	9.8	89.6	31.6	100	4.85	-0.65	7.0	0.25	216	99	0.04	0.01	0.04	0.09	0.17	0.20				
21-MAR-91	28.8	2.6	109.5	11.8	100	4.85	-0.65	7.0	0.25	216	99	0.04	0.01	0.04	0.09	0.17	0.20				
25-MAR-91	29.3	1.5	108.0	7.4	100	4.85	-0.69	8.7	0.45	230	126				0.44	0.50					
02-APR-91	30.5	0.9	109.5	11.3	100	5.09	-0.49	5.4	0.25	151	98	0.07	0.02	0.08	0.20	0.33	0.80				
08-APR-91	14.8	1.0	55.2	5.8	100	4.94	-0.59	7.2	0.35	165	106	0.07	0.02	0.06	0.13	0.22	0.90				
11-APR-91	19.3	2.5	72.8	1.3	100	4.94	-0.59	7.2	0.35	165	106	0.07	0.02	0.06	0.13	0.22	0.90				
08-APR-91	4.3	1.5	19.3	6.9	25																
11-APR-91	0.0	0.0	0.0	0.0	0																
20-DEC-91	13.5	0.5	11.7	1.3	100	4.57	-1.50	10.9	0.34	390	51	0.03	0.01	0.03	0.18	0.33	0.40	0.01	0.00	3	
09-JAN-92	9.5	0.5	10.9	1.3	100	4.41	-1.90	19.5	1.25	488	111	0.19	0.03	0.08	0.34	0.63	0.70	0.06	0.02		
17-JAN-92	26.7	1.5	65.8	6.1	100	4.47	-1.60	15.2	1.35	341	90	0.18	0.03	0.11	0.08	0.19	0.70	0.06	0.02	13	
23-JAN-92	26.7	2.5	65.9	1.3	100	4.43	-2.10	20.5	1.65	494	162	0.27	0.06	0.18	0.53	0.90	1.10	0.08	0.02	20	
30-JAN-92	33.3	0.6	61.4	3.5	100	4.42	-2.10	19.4	1.45	460	145	0.18	0.03	0.11	0.19	0.35	0.60	0.03	0.02	0	
06-FEB-92	37.8	1.0	82.8	2.6	100	4.41	-2.00	20.7	1.65	546	225	0.20	0.04	0.18	0.12	0.24	1.10	0.07	0.02	16	
13-FEB-92	43.3	4.0	88.9	7.0	100	4.39	-2.60	23.1	1.80	590	269	0.23	0.04	0.12	0.21	0.38	1.00	0.08	0.02	11	
20-FEB-92	54.3	3.4	98.8	11.3	100	4.41	-2.50	23.3	1.95	585	254	0.22	0.04	0.14	0.15	0.23	0.80	0.04	0.01	4	
27-FEB-92	61.3	1.5	117.1	18.5	100	4.31	-2.50	23.3	1.95	585	254	0.22	0.04	0.14	0.15	0.23	0.80	0.04	0.01	7	
04-MAR-92	47.0	2.0	113.3	2.3	100	4.41	-1.90	19.4	1.25	488	111	0.19	0.03	0.08	0.34	0.63	0.70	0.06	0.02		
13-MAR-92	46.5	0.5	134.7	8.7	100	4.78	-0.76	10.4	0.90	240	150	0.06	0.01	0.07	0.05	0.12	0.70	0.08	0.01	4	
19-MAR-92	45.8	2.0	145.4	4.0	100	4.61	-1.30	11.4	1.10	336	211	0.12	0.03	0.18	0.07	0.16	1.40	0.06	0.01	6	
25-MAR-92	39.0	1.0	128.6	3.5	100	4.57	-1.30	13.6	1.25	413	253	0.15	0.03	0.08	0.19	0.80	0.13	0.01	0.01	14	
01-APR-92	38.3	0.3	126.3	2.3	100	4.70	-0.94	10.5	0.90	312	205	0.14	0.03	0.15	0.22	0.42	1.20	0.08	0.01	24	
08-APR-92	37.8	1.9	126.3	10.8	100	4.73	-0.96	8.4	0.60	278	196	0.00	0.01	0.05	0.04	0.14	0.60	0.08	0.01	4	
15-APR-92	20.2	1.0	75.9	5.8	100	4.99	-0.45	6.1	0.40	204	163	0.05	0.01	0.04	0.05	0.14	0.40	0.02	0.01	12	
21-APR-92	9.0	1.0	17.8	2.6	40																
24-APR-92	0.0	0.0	0.0	0.0	0																

Table 2 (cont'd)

# PLASTIC LAKE SNOW CORE DATA SUMMARY PCST16

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D.	MEAN (mm)	S.D.		PH	Alk (mg/L)	Cond25 (umol/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	29.2	3.4	72.1	18.2	100	4.56	-1.60	18.8	1.50	510	130	0.48		0.16	0.08	0.28				
08-FEB-88	27.7	8.1	54.5	11.3	100	4.64	-1.24	14.6	1.00	385	170	0.26		0.17	0.05	0.22				
22-FEB-88	56.8	8.5	119.4	16.1	100	4.42	-2.10	20.5	1.10	560	150	0.28		0.08	0.05	0.24				
07-MAR-88	54.3	6.4	140.8	24.3	100	4.44	-2.20	19.5	1.35	595	205	0.30		0.13	0.06	0.65				
14-MAR-88	23.0	2.2	147.7	21.9	100	4.44	-2.40	20.5	1.35	650	230	0.36		0.12	0.07	0.29				
28-MAR-88	13.8	4.3	110.3	35.1	100	4.76	-1.00	10.9	0.50	305	150	0.14		0.15	0.03	0.23				
30-MAR-88	10.9	2.6	88.9	20.7	100															
05-APR-88	3.8	0.6	77.0	12.6	33	4.77	-0.86	8.5	0.35	135	110	0.10		0.22	0.02	0.21				
07-APR-88	2.7	0.3	17.0	4.0	10															
08-APR-88	0.0	0.0	0.0	0.0	0															
10-JAN-89	22.7	1.5	41.5	11.5	100	4.72	-0.95	11.0	0.85	255	140	0.24		0.10	0.05	0.14				
24-JAN-89	30.0	5.3	53.7	6.9	100	4.48	-1.60	21.2	1.85	595	285	0.56		0.18	0.10	0.28				
07-FEB-89	31.3	5.5	54.5	18.7	100	4.39	-1.80	25.7	2.50	635	325	0.66		0.39	0.14	0.33				
21-FEB-89	51.3	6.7	99.6	10.0	100	4.54	-1.50	22.0	2.15	668	290	0.68		0.23	0.13	0.31				
07-MAR-89	54.3	1.5	103.4	4.8	100	4.30	-2.20	25.0	2.05	678	272	0.48		0.09	0.09	0.29				
16-MAR-89	39.0	1.7	82.0	22.6	100	4.48	-1.60	17.9	1.30	570	245	0.36		0.07	0.07	0.26				
20-MAR-89	59.7	1.2	130.9	3.5	100															
28-MAR-89	32.3	1.2	108.7	51.8	100	4.68	-1.10	14.0	0.85	435	235	0.22		0.07	0.04	0.25				
31-MAR-89	32.3	2.3	88.1	10.0	100															
03-APR-89	35.0	2.0	111.8	21.7	100	4.89	-0.67	10.1	0.70	248	170	0.18		0.20	0.03	0.18				
06-APR-89	24.8	4.9	61.4	11.8	100															
10-APR-89	27.2	0.6	78.2	5.3	100	4.97	-0.36	9.0	0.50	223	187	0.16		0.12	0.03	0.13				
13-APR-89	42.2	2.8	110.3	12.6	100															
18-APR-89	30.3	0.6	95.8	10.8	100	4.83	-0.72	11.7	0.80	355	190	0.30		0.17	0.05	0.18				
20-APR-89	28.7	2.5	93.8	13.5	100															
24-APR-89	16.3	4.0	41.5	20.0	100	4.89	-0.70	7.1	0.30	155	140	0.08		0.08	0.02	0.15				
27-APR-89	13.7	2.5	40.0	7.9	20															
28-APR-89	0.0	0.0	0.0	0.0	0															
6-DEC-89	22.3	1.5	45.3	13.4	100	4.04	-3.70	35.6	1.10	216	216	0.41	0.07	0.16	0.11	0.27	0.90	0.04	0.03	36
3-DEC-89	21.7	0.6	19.3	6.1	100	4.22	-2.30	29.5	1.20	949	210	0.45	0.08	0.50	0.14	0.30	2.00	0.03	0.05	30
20-DEC-89	26.0	4.6	29.3	3.5	100	3.96	-4.60	44.4	1.25	1400	268	0.51	0.10	0.32	0.14	0.30	1.20	0.03	0.06	30
28-DEC-89	30.7	2.3	31.6	1.3	100	4.37	-1.80	24.5	1.15	724	183	0.44	0.11	0.27	0.38	0.65	2.20	0.03	0.09	37
03-JAN-90	27.2	3.0	41.5	16.9	100	4.39	-1.70	23.6	1.45	666	193	0.51	0.07	0.26	0.18	0.36	1.80	0.04	0.07	32
10-JAN-90	28.3	2.3	50.7	4.8	100	4.43	-2.30	24.4	1.65	740	288	0.43	0.08	0.26	0.13	0.36	1.10	0.04	0.05	38
17-JAN-90	35.3	4.2	91.9	23.1	100	4.33	-2.70	28.2	2.15	760	361	0.44	0.11	0.24	0.19	0.36	1.20	0.03	0.03	42
25-JAN-90	41.8	2.8	87.3	3.5	100	4.52	-1.60	18.9	1.10	574	230	0.24	0.05	0.21	0.09	0.20	0.90	0.02	0.02	19
31-JAN-90	37.0	2.0	91.2	11.5	100	4.55	-1.60	18.0	1.10	560	250	0.27	0.05	0.17	0.09	0.22	1.10	0.04	0.04	34
07-FEB-90	42.0	1.0	86.6	3.5	100	4.58	-1.40	16.3	1.05	485	260	0.22	0.04	0.18	0.10	0.19	0.90	0.03	0.02	29
14-FEB-90	36.3	2.5	95.7	7.4	100	4.71	-1.10	14.6	0.95	479	298	0.23	0.05	0.20	0.07	0.18	1.10	0.03	0.03	34
21-FEB-90	41.3	1.5	111.8	30.3	100	4.66	-1.10	15.3	0.90	514	275	0.25	0.05	0.17	0.08	0.16	1.00	0.03	0.02	39
28-FEB-90	52.7	2.1	111.0	10.0	100	4.58	-1.40	16.2	0.95	493	234	0.15	0.05	0.21	0.09	0.18	0.90	0.03	0.03	28
07-MAR-90	49.2	1.0	130.1	5.8	100	4.51	-1.70	19.3	1.35	580	248	0.34	0.07	0.31	0.14	0.26	1.80	0.04	0.06	34
12-MAR-90	41.0	1.0	110.3	3.5	100															
15-MAR-90	24.3	3.2	77.4	9.5	100	4.97	-0.54	9.1	0.45	344	225	0.15	0.04	0.27	0.07	0.19	1.60	0.05	0.04	43
21-MAR-90	12.7	0.3	30.8	2.3	25	4.90	-0.68	8.8	0.40	330	217	0.09	0.02	0.14	0.07	0.18	0.80	0.05	0.02	49
28-MAR-90	10.3	0.6	14.7	2.3	25															
04-APR-90	0.0	0.0	0.0	0.0	0															
12-APR-90	0.0	0.0	0.0	0.0	0															

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS											Al (mg/L)			
	MEAN (cm)	S.D. (mm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (umens/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)		DOC (mg/L)	Fe (mg/L)	Mn (mg/L)
12-DEC-90	17.2	0.8	32.3	2.6	100	4.55	-1.40	14.1	0.75	413	128	0.17	0.03	0.04	0.31	0.47	0.50	0.02	0.01	20
19-DEC-90	20.0	1.0	47.6	7.1	100	4.52	-1.40	16.0	1.10	412	119	0.24	0.05	0.11	0.15	0.26	0.80	0.02	0.03	21
04-JAN-91	23.3	1.5	49.9	8.0	100	4.55	-1.50	12.0	0.75	306	93	0.16	0.03	0.19	0.06	0.13	1.20	0.07	0.03	48
16-JAN-91	30.3	3.8	62.3	14.4	100	4.47	-1.30	16.2	0.60	473	84	0.13	0.03	0.09	0.10	0.07	0.90	0.04	0.02	29
23-JAN-91	41.3	5.9	86.6	31.0	100	4.50	-1.30	13.7	0.70	384	91	0.14	0.03	0.10	0.06	0.08	0.70	0.03	0.02	22
30-JAN-91	42.6	2.9	95.0	3.2	100	4.40	-1.80	20.5	1.05	554	116	0.21	0.04	0.13	0.07	0.14	1.10	0.03	0.03	23
06-FEB-91	49.3	0.6	110.3	3.0	100	4.51	-1.50	16.5	1.05	485	124	0.25	0.04	0.10	0.12	0.22	0.70	0.04	0.02	32
05-FEB-91	37.3	0.8	111.8	1.3	100	4.50	-1.50	15.2	1.05	428	119	0.21	0.04	0.12	0.11	0.20	0.80	0.04	0.02	30
08-FEB-91	30.7	1.3	99.6	2.3	100	4.53	-1.30	13.2	0.90	380	120	0.16	0.03	0.09	0.07	0.15	0.90	0.03	0.02	22
13-FEB-91	31.2	2.8	93.5	9.3	100	4.53	-1.60	15.0	0.95	420	130	0.18	0.04	0.09	0.07	0.14	0.70	0.05	0.03	48
20-FEB-91	37.3	1.2	118.7	6.6	100	4.50	-1.60	15.0	0.85	437	129	0.16	0.03	0.07	0.07	0.13	0.60	0.06	0.02	47
27-FEB-91	38.5	3.5	107.2	10.3	100	4.46	-1.60	15.0	0.85	433	129	0.16	0.03	0.07	0.08	0.17	0.90			
04-MAR-91	27.3	0.3	98.8	20.7	100	4.80	-0.76	8.5	0.35	243	105	0.06	0.02	0.06	0.08	0.17	0.90			
08-MAR-91	25.5	1.8	87.3	8.1	100	4.74	-0.93	9.4	0.50	265	100	0.09	0.02	0.09	0.06	0.15	1.10			
13-MAR-91	26.0	2.2	93.5	7.4	100	4.66	-1.10	10.5	0.50	270	105	0.07	0.02	0.09	0.10	0.21	1.10			
19-MAR-91	17.5	1.3	70.5	10.3	100	4.91	-0.56	5.6	0.20	140	74	0.03	0.01	0.08	0.07	0.15	1.20			
21-MAR-91	22.3	0.6	84.3	8.1	100	5.03	-0.34	7.7	0.00	129	99	0.05	0.01	0.11	0.08	0.16	1.20			
25-MAR-91	17.8	2.0	75.9	10.3	100	5.03	-0.39	4.2	0.15	95	90	0.05	0.01	0.11	0.08	0.16	1.20			
28-MAR-91	12.8	2.8	51.4	6.9	100	4.91	-0.48	7.5	0.35	137	80	0.11	0.02	0.17	0.08	0.18	1.80			
02-APR-91	9.0	1.3	35.4	12.8	90	4.91	-0.48													
08-APR-91	0.0	0.0	0.0	0.0	0															
20-DEC-91	14.2	1.5	8.6	1.3	100	4.53	-1.50	11.7	0.31	426	49	0.03	0.01	0.03	0.17	0.32	0.50	0.01	0.00	2
09-JAN-92	12.0	1.3	14.0	1.3	100	4.43	-1.80	21.2	1.30	493	119	0.22	0.04	0.13	0.58	1.03	0.90	0.12	0.04	13
17-JAN-92	35.7	2.3	56.8	4.8	100	4.44	-1.80	16.1	1.25	376	88	0.19	0.03	0.08	0.09	0.21	0.60	0.04	0.04	13
23-JAN-92	35.5	2.0	76.6	4.6	100	4.30	-2.40	26.0	2.15	628	100	0.36	0.06	0.18	0.31	0.59	1.20	0.08	0.08	21
30-JAN-92	40.3	4.2	78.9	13.8	100	4.46	-1.90	17.0	1.30	460	175	0.18	0.03	0.09	0.20	0.40	0.70	0.05	0.02	0
06-FEB-92	37.7	1.5	69.0	9.3	100	4.45	-1.90	19.6	1.50	534	217	0.23	0.04	0.34	0.10	0.26	1.70	0.07	0.06	11
13-FEB-92	41.7	1.5	73.6	4.8	100	4.42	-2.40	19.4	1.60	532	239	0.21	0.03	0.13	0.14	0.28	1.10	0.04	0.03	6
20-FEB-92	44.0	1.7	91.9	9.2	100	4.36	-2.30	24.1	2.00	580	255	0.33	0.05	0.18	0.14	0.30	1.40	0.05	0.06	0
27-FEB-92	49.5	1.7	90.4	9.2	100	4.38	-2.30	23.3	2.00	578	237	0.30	0.05	0.17	0.13	0.29	1.70	0.06	0.05	0
04-MAR-92	52.0	1.0	113.3	2.3	100	4.36	-2.00	22.9	2.10	570	260	0.33	0.05	0.18	0.17	0.35	1.40	0.08	0.05	17
13-MAR-92	41.3	0.6	100.3	1.3	100	4.56	-1.30	13.2	1.15	340	185	0.15	0.03	0.22	0.15	0.30	1.50	0.08	0.02	15
19-MAR-92	43.7	1.5	115.6	8.3	100	4.52	-1.60	13.6	1.40	376	218	0.18	0.03	0.15	0.09	0.22	1.30	0.08	0.03	13
25-MAR-92	42.3	2.3	127.1	11.5	100	4.53	-1.50	15.6	1.35	433	244	0.18	0.03	0.13	0.12	0.09	1.20	0.10	0.03	24
01-APR-92	34.3	0.8	108.7	24.2	100	4.61	-1.10	11.3	1.05	321	217	0.15	0.03	0.13	0.10	0.26	1.20	0.06	0.03	18
08-APR-92	29.5	1.0	91.9	4.8	100	4.82	-0.77	6.5	0.45	212	171	0.06	0.01	0.09	0.05	0.16	1.00	0.15	0.02	21
15-APR-92	26.5	2.3	98.8	21.8	100	4.91	-0.67	6.8	0.45	164	118	0.06	0.01	0.07	0.04	0.14	1.20	0.07	0.02	18
21-APR-92	10.0	1.8	30.0	1.1	60															
24-APR-92	0.0	0.0	0.0	0.0	0															

PLASTIC LAKE SNOW CORE DATA SUMMARY  
PCSZ04

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (mm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond35 (µmole/cm)	SO4 (mg/L)	Nitrate (µg/L)	Ammonia (µmole/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	38.0	6.6	98.8	9.5	100	4.53	-1.60	15.3	1.15	400	130	0.28		0.10	0.05	0.17				
08-FEB-88	42.8	10.8	98.0	16.6	100	4.63	-1.24	12.5	0.75	315	135	0.20		0.18	0.04	0.13				
22-FEB-88	72.3	11.6	144.7	57.4	100	4.48	-1.90	17.7	0.95	505	165	0.24		0.10	0.04	0.18				
07-MAR-88	69.3	10.8	168.4	46.8	100	4.50	-1.70	19.3	1.25	635	245	0.48		0.05	0.05	0.24				
14-MAR-88	28.1	4.8	189.7	38.5	100	4.54	-1.80	17.9	1.30	590	260	0.32		0.11	0.05	0.22				
28-MAR-88	16.7	2.3	137.0	23.1	100	4.68	-1.30	11.4	0.45	320	145	0.14		0.06	0.02	0.50				
30-MAR-88					100															
05-APR-88	5.1	1.5	43.8	23.0	33	4.86	-0.69	8.7	0.45	145	135	0.22		0.18	0.04	0.20				
07-APR-88	6.3	2.2	53.0	26.6	10															
08-APR-88					0															
10-JAN-89	24.3	2.5	37.7	6.1	100	4.79	-0.85	10.6	0.80	265	140	0.26		0.09	0.05	0.18				
24-JAN-89	31.3	1.5	43.0	15.6	100	4.44	-1.60	22.2	1.85	125	61	0.58		0.13	0.10	0.28				
07-FEB-89	31.0	5.3	75.1	15.6	100	4.46	-1.70	21.0	1.80	550	315	0.46		0.21	0.09	0.25				
21-FEB-89	49.0	4.4	86.6	3.5	100	4.45	-1.80	23.9	2.20	668	230	0.72		0.12	0.12	0.35				
07-MAR-89	49.3	0.6	117.2	27.4	100	4.34	-2.10	22.8	1.85	590	241	0.42		0.11	0.08	0.25				
16-MAR-89	39.3	1.5	94.2	10.8	100															
20-MAR-89	57.0	2.0	147.0	18.7	100	4.49	-1.60	18.1	1.35	535	210	0.38		0.12	0.07	0.27				
28-MAR-89	31.7	6.4	94.2	25.8	100	4.64	-1.10	16.2	1.05	460	200	0.32		0.18	0.07	0.29				
31-MAR-89	26.8	1.0	71.3	17.2	100															
03-APR-89	28.3	2.1	101.9	9.2	100	4.68	-1.10	12.8	0.90	322	210	0.30		0.23	0.05	0.24				
06-APR-89	23.0	2.0	68.2	7.4	100															
10-APR-89	23.8	0.8	71.3	5.8	100	4.96	-0.57	9.3	0.50	223	200	0.16		0.10	0.03	0.17				
13-APR-89	48.7	1.2	106.5	21.0	100															
18-APR-89	18.7	3.1	48.4	7.0	100	4.75	-0.92	9.7	0.45	225	120	0.10		0.07	0.02	0.14				
20-APR-89	11.2	3.5	27.0	4.8	100															
24-APR-89	25.7	1.5	85.8	7.9	100	4.91	-0.61	9.3	0.55	305	235	0.18		0.07	0.03	0.18				
27-APR-89	7.7	2.5	29.6	17.8	20															
28-APR-89					0															
6-DEC-89	14.3	0.6	13.2	2.6	100	4.57	-1.00	16.8	1.05	575	207	0.46	0.09	0.16	0.09	0.22	1.40	0.04	0.04	38
3-DEC-89	15.0	0.0	10.9	1.3	100	4.54	-1.00	18.9	1.20	621	200	0.52	0.10	0.35	0.18	0.37	2.30	0.04	0.06	36
8-DEC-89	18.2	0.3	12.4	8.3	100	4.45	-1.30	19.5	1.15	650	209	0.48	0.11	0.29	0.14	0.29	1.90	0.04	0.06	31
8-DEC-89	22.0	1.0	27.7	2.6	100	4.39	-1.70	24.7	1.20	773	221	0.51	0.11	0.17	0.51	0.93	1.60	0.04	0.06	40
03-JAN-90	21.8	1.4	32.3	10.3	100	4.34	-1.90	26.2	1.90	695	195	0.55	0.07	0.28	0.21	0.42	1.10	0.04	0.03	36
10-JAN-90	23.3	1.5	43.8	10.8	100	4.05	-5.00	56.6	1.50	1900	232	0.42	0.06	0.18	0.12	0.28	1.10	0.05	0.02	43
17-JAN-90	30.0	1.0	74.3	6.1	100	4.35	-2.70	27.0	2.15	690	282	0.51	0.08	0.27	0.16	0.31	1.50	0.04	0.05	40
25-JAN-90	37.0	2.0	79.7	5.3	100	4.49	-1.70	20.0	1.15	574	230	0.27	0.05	0.20	0.09	0.22	1.40	0.01	0.02	13
31-JAN-90	31.8	2.8	85.0	7.4	100	4.47	-1.70	19.5	1.30	550	240	0.27	0.05	0.15	0.07	0.21	1.40	0.05	0.02	33
07-FEB-90	32.0	1.0	64.4	10.6	100	4.50	-1.60	19.7	1.30	565	254	0.31	0.06	0.30	0.09	0.23	1.60	0.05	0.03	46
14-FEB-90	28.0	0.0	73.6	5.3	100	4.65	-1.30	15.1	0.90	460	206	0.20	0.04	0.24	0.07	0.18	1.10	0.04	0.02	40
21-FEB-90	29.0	2.0	83.5	12.1	100	4.61	-1.30	15.2	0.75	490	219	0.21	0.04	0.17	0.08	0.17	1.20	0.05	0.02	56
28-FEB-90	37.8	0.8	88.1	10.0	100	4.58	-1.50	15.8	0.90	484	217	0.15	0.04	0.18	0.09	0.18	0.60	0.05	0.01	46
07-MAR-90	35.8	1.5	82.8	8.1	100	4.51	-1.70	17.8	1.10	546	241	0.27	0.05	0.23	0.11	0.22	1.10	0.04	0.02	42
12-MAR-90	29.7	1.5	83.5	4.0	100															
15-MAR-90	16.0	1.0	59.1	9.3	100	4.79	-0.79	11.0	0.55	393	204	0.14	0.03	0.21	0.09	0.21	1.20	0.05	0.01	44
21-MAR-90	9.0	1.0	20.9	7.0	50	4.77	-0.96	9.9	0.45	379	222	0.11	0.02	0.09	0.08	0.18	0.60	0.03	0.01	27
28-MAR-90	0.0	0.0	0.0	0.0	0															
04-APR-90	0.0	0.0	0.0	0.0	10															
12-APR-90	0.0	0.0	0.0	0.0	0															

Table 4



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (mmhos/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
12-DEC-90	11.0	0.5	19.3	4.6	100	4.71	-0.99	11.8	0.60	285	77	0.14	0.02	0.03	0.20	0.30	0.40	0.02	0.00	18
19-DEC-90	17.8	4.7	39.6	8.3	100	4.51	-1.40	20.9	1.70	581	141	0.36	0.08	0.13	0.13	0.19	1.20	0.03	0.04	32
04-JAN-91	15.7	2.1	31.6	6.5	100	4.38	-1.30	14.2	1.00	363	89	0.38	0.05	0.41	0.11	0.22	2.50	0.07	0.03	52
09-JAN-91	21.0	4.4	41.5	7.4	100	4.56	-1.10	16.1	0.85	439	89	0.32	0.07	0.29	0.28	0.44	2.40	0.07	0.04	55
16-JAN-91	30.7	0.6	62.1	7.4	100	4.47	-1.50	16.9	0.95	481	125	0.23	0.04	0.13	0.09	0.13	1.00	0.02	0.00	20
23-JAN-91	40.8	8.7	94.6	15.4	100	4.29	-2.60	23.9	1.70	632	158	0.35	0.06	0.10	0.12	0.22	1.40	0.05	0.03	43
30-JAN-91	34.5	0.5	75.9	4.8	100	4.39	-1.80	23.8	1.35	736	176	0.41	0.06	0.10	0.20	0.33	1.20	0.02	0.02	39
05-FEB-91	27.2	2.0	79.7	7.4	100	4.48	-1.60	19.5	1.35	554	156	0.32	0.06	0.09	0.14	0.25	1.10	0.04	0.02	34
08-FEB-91	27.2	1.0	90.4	6.9	100															
13-FEB-91	26.7	1.2	88.1	10.1	100	4.45	-1.60	16.4	1.15	455	150	0.27	0.05	0.09	0.11	0.20	1.10	0.04	0.02	30
20-FEB-91	37.0	1.0	117.1	9.5	100	4.38	-1.10	14.1	0.80	418	129	0.18	0.03	0.07	0.08	0.17	0.90	0.04	0.01	38
27-FEB-91	36.5	0.5	108.0	3.5	100	4.45	-1.60	17.3	1.05	512	159	0.27	0.05	0.10	0.11	0.17	1.20	0.06	0.02	47
04-MAR-91	25.0	1.0	89.6	11.5	100	4.74	-0.86	10.6	0.50	311	132	0.11	0.02	0.08	0.16	0.28	1.20			
08-MAR-91	23.7	2.3	80.5	1.3	100	4.71	-1.00	10.1	0.45	320	130	0.10	0.02	0.07	0.07	0.15	1.40			
15-MAR-91	24.7	1.5	86.6	8.7	100	4.71	-0.92	10.0	0.40	300	135	0.09	0.02	0.07	0.14	0.25	1.10			
19-MAR-91	19.0	2.0	75.9	13.4	100	4.80	-0.93	7.4	0.25	241	139	0.05	0.01	0.05	0.11	0.19	0.70			
21-MAR-91	22.7	0.6	82.8	4.8	100															
25-MAR-91	21.5	1.3	85.9	1.5	100	4.99	-0.50	6.3	0.00	198	137						0.80			
28-MAR-91	22.5	2.2	87.3	9.3	100	5.12	-0.39	4.7	0.15	131	129	0.06	0.01	0.09	0.13	0.24	1.40			
02-APR-91	12.8	2.6	48.4	9.5	90	4.94	-0.45	7.4	0.30	158	106	0.08	0.02	0.09	0.09	0.19	1.60			
08-APR-91	0.0	0.0	0.0	0.0	0															
09-APR-91	11.7	0.8	5.6	2.3	100	4.53	-1.60	11.7	0.33	419	51	0.03	0.01	0.03	0.14	0.26	0.50	0.02	0.00	3
20-DEC-90	9.5	0.5	13.2	3.5	100	4.44	-1.80	18.4	1.10	592	118	0.18	0.03	0.09	0.23	0.46	0.80	0.08	0.02	
09-JAN-92	25.0	1.0	36.1	5.8	100	4.40	-1.50	14.1	1.10	336	81	0.21	0.04	0.07	0.09	0.19	0.70	0.04	0.02	13
17-JAN-92	28.0	3.1	59.1	10.6	100	4.21	-3.30	36.3	3.25	860	264	0.78	0.12	0.25	0.52	0.55	2.20	0.19	0.06	32
23-JAN-92	34.0	2.0	74.3	14.3	100	4.55	-1.50	14.4	1.20	380	130	0.20	0.03	0.07	0.12	0.25	0.80	0.06	0.02	0
06-FEB-92	32.2	1.0	62.1	4.8	100	4.39	-2.10	25.2	2.50	651	116	0.35	0.08	0.22	0.17	0.35	1.70	0.06	0.04	22
13-FEB-92	35.2	0.3	57.5	7.0	100	4.38	-2.70	25.4	2.35	685	277	0.52	0.09	0.19	0.12	0.41	2.00	0.08	0.03	13
20-FEB-92	42.0	0.0	77.4	8.7	100	4.23	-3.00	39.7	4.50	835	276	1.13	0.19	0.43	0.27	0.61	3.70	0.09	0.08	7
27-FEB-92	49.5	1.3	112.6	15.3	100	4.23	-3.00	37.7	4.25	784	245	1.05	0.18	0.41	0.22	0.56	3.80	0.09	0.06	30
04-MAR-92	51.5	4.1	106.4	12.8	100	4.35	-2.10	29.9	3.40	640	320	0.81	0.15	0.48	0.21	0.48	3.60	0.08	0.06	20
15-MAR-92	42.0	0.0	93.4	5.8	100	4.43	-1.80	20.0	2.00	355	205	0.37	0.07	0.20	0.10	0.33	3.50	0.11	0.03	10
19-MAR-92	40.2	0.3	113.3	4.0	100	4.58	-1.20	15.3	1.65	436	249	0.32	0.06	0.18	0.13	0.31	2.60	0.11	0.03	10
25-MAR-92	39.0	2.0	116.4	5.8	100	4.51	-1.60	16.7	1.60	472	261	0.30	0.05	0.13	0.12	0.38	1.60	0.11	0.02	28
01-APR-92	30.0	1.0	102.6	5.3	100	4.59	-1.10	14.4	1.20	396	249	0.24	0.04	0.16	0.19	0.41	2.20	0.10	0.02	30
08-APR-92	26.5	1.8	95.0	7.9	100	4.80	-0.69	8.1	0.50	252	196	0.12	0.02	0.09	0.06	0.21	1.60	0.10	0.01	7
15-APR-92	27.7	0.6	98.8	12.6	100	4.89	-0.59	8.0	0.55	240	177	0.10	0.02	0.08	0.07	0.20	1.10	0.07	0.01	22
21-APR-92	8.0	1.0	30.0	7.0	60															
24-APR-92	0.0	0.0	0.0	0.0	0															

# PLASTIC LAKE SNOW CORE DATA SUMMARY PCSZ05

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		pH	Alk (ug/L)	Cond25 (um-s/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	39.2	5.8	78.9	26.0	100	4.52	-1.60	17.0	1.45	435	145	0.34		0.11	0.06	0.17				
08-FEB-88	49.3	6.1	108.7	4.0	100	4.61	-1.45	14.1	0.90	350	150	0.24		0.09	0.04	0.17				
22-FEB-88	87.3	4.0	179.1	19.2	100	4.49	-1.80	18.2	1.05	455	140	0.24		0.17	0.04	0.30				
07-MAR-88	77.7	7.6	191.3	26.4	100	-999.00	-999.00	15.4	1.10	325	205	0.50		0.22	0.06	0.18				
14-MAR-88	30.0	0.9	192.0	11.8	100	4.48	-1.90	17.5	1.15	320	215	0.28		0.09	0.04	0.19				
28-MAR-88	24.3	1.1	173.7	12.6	100	4.98	-0.59	9.1	0.65	295	150	0.24		0.15	0.03	0.12				
30-MAR-88	15.7	2.5	177.5	33.3	100															
05-APR-88	15.3	1.4	126.3	19.5	67	4.98	-0.75	6.3	0.35	135	105	0.14		0.10	0.02	0.12				
07-APR-88	10.3	2.3	86.6	29.0	67															
11-APR-88	8.4	0.5	46.1	10.3	33	5.03	-0.46	6.9	0.30	155	135	0.18		0.13	0.02	0.14				
15-APR-88	2.5	0.8	4.8	4.8	33															
18-APR-88	5.1	1.4	35.4	11.9	10	5.03	-0.43	5.9	0.45	140	110	0.10		0.06	0.02	0.09				
22-APR-88	5.4	2.2	32.3	10.8	10															
23-APR-88	0.0	0.0	0.0	0.0	0															
10-JAN-89	35.0	3.5	95.1	5.8	100	4.65	-1.20	12.0	0.90	320	165	0.22		0.07	0.04	0.15				
24-JAN-89	50.7	2.5	107.2	18.5	100	4.54	-1.40	16.8	1.20	495	245	0.30		0.07	0.05	0.20				
07-FEB-89	60.3	5.9	122.5	9.2	100	4.37	-1.20	15.8	1.40	520	320	0.36		0.21	0.07	0.25				
21-FEB-89	91.3	1.2	148.5	32.9	100	4.10	-1.30	18.6	1.45	549	260	0.38		0.08	0.07	0.33				
07-MAR-89	75.7	1.5	159.9	19.2	100	4.27	-2.40	25.4	1.90	626	232	0.38		0.07	0.07	0.34				
16-MAR-89	70.0	1.0	163.4	13.9	100															
20-MAR-89	89.7	8.1	189.0	6.9	100	4.47	-1.80	16.8	1.30	505	225	0.26		0.09	0.05	0.22				
28-MAR-89	61.0	6.1	143.1	36.0	100	4.68	-1.10	15.0	1.05	480	235	0.24		0.16	0.06	0.18				
31-MAR-89	57.2	3.0	177.5	8.3	100															
03-APR-89	57.0	3.6	192.0	28.7	100	4.82	-0.86	10.3	0.75	272	175	0.20		0.19	0.00	0.14				
06-APR-89	46.7	5.0	147.7	23.3	100															
10-APR-89	45.3	1.3	150.0	6.1	100	4.88	-0.75	8.8	0.60	223	175	0.14		0.09	0.03	0.10				
13-APR-89	65.7	3.2	165.3	12.6	100															
18-APR-89	55.3	3.2	170.6	8.3	100	5.02	-0.43	8.7	0.45	250	160	0.12		0.03	0.02	0.11				
20-APR-89	45.7	2.3	143.1	15.9	100															
24-APR-89	42.3	3.1	141.6	17.5	100	4.66	-1.80	12.5	0.75	460	235	0.22		0.06	0.04	0.14				
27-APR-89	30.0	1.0	104.2	16.1	50															
01-MAY-89	16.7	0.6	46.1	1.3	10															
02-MAY-89	0.0	0.0	0.0	0.0	0															
6-DEC-89	21.7	2.0	28.5	2.3	100	4.52	-1.20	17.3	1.05	604	249	0.38	0.06	0.11	0.15	0.29	0.70	0.03	0.01	33
9-DEC-89	22.8	2.3	23.9	2.3	100	4.46	-1.20	19.1	1.20	657	240	0.42	0.07	0.21	0.15	0.29	1.10	0.03	0.03	29
0-DEC-89	25.5	0.5	25.4	1.3	100	4.49	-1.20	18.3	1.15	680	213	0.42	0.08	0.30	0.12	0.25	0.70	0.03	0.03	26
8-DEC-89	31.7	4.2	23.1	12.6	100	4.41	-1.60	21.3	0.95	715	197	0.38	0.07	0.13	0.48	0.83	0.80	0.03	0.03	26
3-JAN-90	31.7	4.2	27.7	9.3	100	4.38	-1.70	21.3	0.95	676	196	0.29	0.05	0.10	0.14	0.28	0.70	0.03	0.02	27
0-JAN-90	37.0	1.0	59.8	2.6	100	4.14	-4.10	36.9	0.90	1300	231	0.23	0.04	0.07	0.09	0.22	0.70	0.02	0.01	20
7-JAN-90	45.3	0.6	108.0	8.1	100	4.46	-2.10	19.8	1.00	390	282	0.21	0.03	0.09	0.14	0.21	0.70	0.02	0.01	23
5-JAN-90	56.0	3.6	118.7	3.5	100	4.55	-1.50	17.3	0.80	540	240	0.15	0.03	0.07	0.07	0.16	0.50	0.03	0.01	19
1-JAN-90	51.7	1.2	127.1	23.3	100	4.25	-2.90	22.9	0.90	750	250	0.19	0.04	0.12	0.08	0.18	0.70	0.03	0.01	21
07-FEB-90	57.3	1.5	128.6	8.1	100	4.58	-1.70	17.7	1.03	525	287	0.20	0.04	0.09	0.07	0.16	0.60	0.03	0.01	30
14-FEB-90	51.0	1.0	112.6	4.8	100	4.55	-1.70	17.7	1.03	572	287	0.21	0.04	0.10	0.07	0.16	0.60	0.03	0.01	32
21-FEB-90	41.3	3.2	112.6	11.5	100	4.72	-1.10	14.2	0.80	449	235	0.23	0.05	0.27	0.06	0.14	1.70	0.03	0.02	40
28-FEB-90	58.0	4.4	124.8	10.5	100	4.57	-1.60	14.6	0.90	443	233	0.14	0.04	0.17	0.08	0.14	0.60	0.03	0.02	45
07-MAR-90	58.7	0.8	148.5	25.1	100	4.59	-1.50	14.3	0.80	419	208	0.17	0.03	0.10	0.09	0.17	0.70	0.03	0.01	27



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (mm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (umens/cm)	SO4 (mg/L)	Nitrate (µg/L)	Ammonia (µg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
15-MAR-90	46.3	1.5	159.9	9.5	100	4.86	-0.79	9.5	0.55	360	216	0.09	0.02	0.09	0.08	0.18	0.60	0.02	0.01	22
21-MAR-90	32.3	1.5	65.2	19.6	90	4.87	-0.84	8.7	0.40	346	219	0.10	0.02	0.09	0.09	0.19	0.70	0.03	0.01	26
28-MAR-90	30.2	1.0	99.6	11.5	75															
04-APR-90	23.8	5.5	79.7	21.3	75															
12-APR-90	17.3	1.5	50.7	10.6	50															
18-APR-90	24.8	6.0	79.7	20.8	25															
19-APR-90	0.0	0.0	0.0	0.0	0															
12-DEC-90	18.7	2.1	33.1	2.3	100	4.67	-1.00	14.4	0.80	375	122	0.17	0.03	0.05	0.29	0.61	0.60	0.05	0.00	38
19-DEC-90	22.0	0.8	45.3	1.1	100	4.52	-1.40	16.2	0.95	412	119	0.14	0.03	0.07	0.06	0.29	0.60	0.02	0.01	16
04-JAN-91	26.7	0.6	49.1	2.3	100	4.67	-1.10	9.6	0.55	281	90	0.10	0.02	0.10	0.08	0.13	0.50	0.03	0.01	21
09-JAN-91	40.0	1.7	74.3	4.0	100	4.64	-0.95	11.3	0.60	331	85	0.15	0.03	0.17	0.13	0.25	0.70	0.03	0.01	27
16-JAN-91	42.7	6.7	121.0	12.6	100	4.48	-1.50	18.1	0.90	445	135	0.15	0.03	0.09	0.09	0.15	0.80	0.03	0.02	24
23-JAN-91	57.2	1.6	140.1	2.6	100	4.34	-2.30	20.6	1.30	546	154	0.24	0.04	0.09	0.11	0.21	0.70	0.04	0.02	32
30-JAN-91	60.3	9.6	113.3	27.9	100	4.34	-2.10	19.5	1.20	603	141	0.27	0.05	0.09	0.25	0.42	0.80	0.04	0.02	34
05-FEB-91	54.7	4.3	137.8	11.8	100	4.38	-2.00	20.5	1.40	589	168	0.29	0.05	0.11	0.13	0.25	0.70	0.04	0.02	30
08-FEB-91	37.3	2.4	114.1	17.4	100															
13-FEB-91	40.0	1.0	110.3	7.4	100	4.57	-1.10	15.1	1.00	447	146	0.25	0.06	0.20	0.38	0.61	1.40	0.05	0.02	32
20-FEB-91	49.3	0.6	124.0	2.6	100	4.43	-1.80	17.2	0.90	502	133	0.18	0.04	0.04	0.11	0.20	0.50	0.04	0.01	32
27-FEB-91	53.2	2.1	129.4	23.9	100	4.51	-1.30	13.9	0.70	424	131	0.14	0.03	0.05	0.08	0.14	0.50	0.05	0.03	48
04-MAR-91	47.3	0.3	146.2	12.6	100	4.64	-1.20	10.9	0.40	344	114	0.08	0.02	0.06	0.09	0.19	0.80			
08-MAR-91	49.0	3.0	168.3	4.0	100	4.66	-1.10	11.0	0.45	355	122	0.08	0.02	0.04	0.09	0.17	0.50			
13-MAR-91	48.3	2.0	152.3	6.1	100	4.67	-1.00	10.8	0.50	340	130	0.10	0.02	0.08	0.10	0.19	0.70			
19-MAR-91	40.7	2.0	150.0	6.9	100	4.78	-0.84	8.1	0.30	271	117	0.04	0.01	0.03	0.04	0.10	0.20			
21-MAR-91	45.0	1.7	152.3	4.0	100															
25-MAR-91	46.7	2.3	155.4	7.0	100	4.91	-0.51	6.6	0.00	232	125					0.14	0.30			4
28-MAR-91	40.7	0.8	148.5	3.5	100	5.11	-0.62	5.0	0.35	188	122	0.06	0.01	0.06	0.07	0.12	0.70			12
02-APR-91	38.7	1.3	150.8	7.0	100	4.98	-0.52	6.9	0.25	204	118	0.06	0.01	0.03	0.15	0.26	0.30			0
11-APR-91	17.7	4.6	67.5	14.3	50															
11-APR-91	11.5	3.0	50.8	11.5	10															
15-APR-91	5.8	0.3	17.8	1.3	10															
18-APR-91	0.0	0.0	0.0	0.0	0															
02-DEC-91	17.0	1.3	20.1	6.6	100	4.62	-1.20	11.5	0.31	368	45	0.04	0.01	0.07	0.48	0.77	0.30	0.02	0.00	4
09-JAN-92	18.2	1.9	32.3	10.8	100	4.80	-0.60	11.0	0.80	419	91	0.17	0.11	0.37	0.20	0.37	2.00	0.09	0.06	12
17-JAN-92	38.2	1.6	90.6	4.6	100	4.52	-1.50	12.2	0.80	325	98	0.09	0.02	0.09	0.07	0.15	0.50	0.06	0.01	14
23-JAN-92	39.8	3.3	90.5	5.8	100	4.50	-1.60	14.6	0.95	405	142	0.07	0.02	0.08	0.10	0.22	0.80	0.05	0.01	0
30-JAN-92	43.0	0.0	68.6	8.0	100	4.42	-2.10	17.6	1.20	500	190	0.09	0.02	0.10	0.09	0.20	0.40	0.04	0.01	0
06-FEB-92	44.5	0.5	79.7	2.6	100	4.40	-1.90	17.2	1.15	528	215	0.13	0.03	0.18	0.07	0.15	1.40	0.06	0.02	11
13-FEB-92	47.3	2.1	89.6	3.5	100	4.45	-2.20	18.3	1.30	600	251	0.17	0.03	0.16	0.11	0.23	0.90	0.06	0.02	11
27-FEB-92	55.1	1.1	135.5	11.5	100	4.42	-2.00	19.2	1.25	504	207	0.13	0.02	0.11	0.09	0.19	0.90	0.04	0.01	0
04-MAR-92	70.0	6.2	136.3	4.6	100	4.41	-1.90	18.6	1.35	539	237	0.12	0.02	0.06	0.16	0.32	0.70	0.04	0.01	0
11-MAR-92	75.0	1.7	132.4	3.6	100	4.66	-1.10	13.5	1.15	320	175	0.08	0.02	0.06	0.06	0.14	0.50	0.07	0.01	7
19-MAR-92	70.0	1.0	192.8	2.6	100	4.64	-1.40	10.4	0.90	220	150	0.04	0.01	0.02	0.04	0.09	0.50	0.06	0.00	11
13-MAR-92	65.2	0.8	183.6	1.3	100	4.51	-1.50	13.1	1.15	396	218	0.04	0.01	0.03	0.07	0.15	0.60	0.02	0.01	0
25-MAR-92	65.3	2.5	199.7	7.4	100	4.51	-1.40	11.9	0.95	320	202	0.07	0.02	0.06	0.16	0.31	0.30	0.07	0.01	14
01-APR-92	57.0	3.8	198.2	12.1	100	4.62	-1.10	10.2	0.85	293	187	0.07	0.02	0.06	0.09	0.19	0.70	0.07	0.01	18
08-APR-92	44.2	0.8	155.4	4.8	100	4.86	-0.66	5.9	0.40	203	162	0.05	0.01	0.07	0.04	0.13	0.60	0.04	0.01	0
15-APR-92	49.3	2.4	146.9	4.8	100	5.17	-0.23	5.2	0.35	189	154	0.04	0.01	0.03	0.04	0.11	0.20	0.02	0.00	16
21-APR-92	33.2	8.1	114.1	16.3	90															
24-APR-92	26.0	8.7	90.4	48.7	75															
28-APR-92	16.0	3.5	50.7	14.6	10															
01-MAY-92	0.0	0.0	0.0	0.0	0															

Table 5. (cont'd)

# PLASTIC LAKE SNOW CORE DATA SUMMARY PCSZ07

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (um-s/cm)	SO4 (ug/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (ug/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
22-JAN-88	41.3	6.0	89.6	8.1	100	4.50	-1.70	16.9	1.40	450	145	0.34	0.12	0.06	0.19	0.06				
08-FEB-88	48.4	7.3	103.4	17.5	100	4.58	-1.45	13.8	0.90	345	145	0.22	0.07	0.04	0.12	0.04				
22-FEB-88	82.7	2.3	150.8	35.0	100	4.53	-1.70	16.3	0.80	455	165	0.16	0.07	0.03	0.20	0.03				
07-MAR-88	71.7	8.6	192.8	18.7	100	4.51	-1.40	18.1	1.05	575	230	0.28	0.05	0.04	0.20	0.04				
14-MAR-88	29.3	1.8	195.9	12.1	100	4.47	-1.70	18.6	1.20	620	255	0.28	0.06	0.04	0.20	0.06				
28-MAR-88	21.8	1.3	166.1	23.8	100	4.74	-1.20	11.1	0.55	350	190	0.12	0.04	0.01	0.14	0.01				
30-MAR-88	20.1	2.0	173.7	19.5	100															
05-APR-88	11.8	0.8	109.5	7.0	67	4.95	-0.62	7.1	0.35	185	125	0.12	0.08	0.02	0.15	0.08				
07-APR-88	8.3	1.8	64.4	13.2	67															
11-APR-88	6.4	2.6	43.0	24.5	33	4.95	-0.40	8.7	0.35	165	100	0.36	0.36	0.05	0.18	0.36				
15-APR-88	2.8	1.4	1.8	3.5	33															
22-APR-88	10.3	0.8	75.1	4.8	10	5.25	-0.35	5.2	0.40	170	145	0.08	0.08	0.02	0.10	0.08				
23-APR-88	0.0	0.0	0.0	0.0	0															
10-JAN-89	25.7	2.5	43.8	8.1	100	5.27	-0.30	11.7	0.90	300	155	0.24	0.10	0.05	0.13	0.10				
24-JAN-89	43.0	3.6	78.2	5.8	100	4.51	-1.50	17.7	1.35	100	51	0.36	0.07	0.07	0.21	0.07				
07-FEB-89	50.3	8.3	93.5	5.8	100	4.58	-1.20	15.7	1.40	455	260	0.36	0.19	0.07	0.20	0.19				
21-FEB-89	61.0	3.6	107.2	18.5	100	4.54	-1.50	19.6	1.65	564	240	0.46	0.16	0.09	0.25	0.16				
07-MAR-89	68.3	7.4	133.2	13.4	100	4.38	-2.00	23.9	1.85	601	241	0.40	0.10	0.07	0.41	0.10				
16-MAR-89	63.0	1.0	150.0	13.9	100															
20-MAR-89	81.0	3.5	186.7	14.3	100	4.43	-1.90	18.5	1.45	555	230	0.32	0.09	0.06	0.23	0.09				
28-MAR-89	55.0	3.6	153.8	16.9	100	4.64	-1.20	16.1	1.20	485	210	0.30	0.14	0.06	0.22	0.14				
31-MAR-89	49.0	2.0	147.7	2.3	100															
03-APR-89	49.7	1.2	163.0	1.3	100	5.32	-0.17	10.6	0.85	272	195	0.38	0.21	0.00	0.69	0.21				
06-APR-89	42.7	1.0	125.6	16.3	100	5.01	-0.57	7.7	0.50	223	175	0.14	0.10	0.03	0.13	0.10				
13-APR-89	46.0	3.1	152.3	10.5	100	5.01	-0.57	7.7	0.50	223	175	0.14	0.10	0.03	0.13	0.10				
10-APR-89	53.3	12.3	113.3	25.5	100	5.06	-0.31	7.9	0.45	235	140	0.18	0.11	0.04	0.12	0.11				
18-APR-89	44.0	2.0	143.9	13.2	100	5.04	-0.65	7.9	0.50	265	220	0.14	0.12	0.03	0.18	0.12				
20-APR-89	42.0	2.8	153.8	9.0	100															
24-APR-89	32.3	1.2	108.0	7.4	100	5.04	-0.65	7.9	0.50	265	220	0.14	0.12	0.03	0.18	0.12				
27-APR-89	27.0	1.0	95.4	6.7	50															
01-MAY-89	11.0	2.6	28.5	12.1	10															
02-MAY-89	0.0	0.0	0.0	0.0	0															
6-DEC-89	17.2	0.3	27.0	3.5	100	4.64	-0.86	16.8	1.05	575	216	0.41	0.07	0.23	0.27	0.48	0.80	0.16	0.02	225
9-DEC-89	18.2	1.0	16.3	5.8	100	4.58	-0.97	17.0	1.10	616	220	0.46	0.08	0.28	0.11	0.32	1.20	0.08	0.03	106
10-DEC-89	23.7	0.6	22.4	7.0	100	4.50	-1.20	18.0	0.95	700	213	0.50	0.08	0.26	0.11	0.24	0.70	0.08	0.02	89
8-DEC-89	30.7	0.6	28.5	8.3	100	4.39	-1.80	26.0	1.30	695	207	0.40	0.06	0.14	0.66	1.02	0.80	0.03	0.02	28
10-DEC-89	29.7	1.3	33.8	7.4	100	4.38	-1.80	23.9	1.30	695	200	0.37	0.06	0.20	0.20	0.41	0.90	0.02	0.02	24
8-DEC-89	32.3	0.6	59.1	4.8	100	4.32	-2.80	26.3	1.15	780	224	0.33	0.05	0.20	0.16	0.31	0.80	0.03	0.02	42
10-JAN-90	38.0	1.0	82.0	9.3	100	4.02	-5.60	40.3	1.55	1750	302	0.34	0.06	0.22	0.25	0.40	1.90	0.02	0.02	25
17-JAN-90	47.0	2.6	92.7	4.0	100	4.54	-1.60	17.9	1.00	566	230	0.21	0.03	0.12	0.09	0.19	0.80	0.03	0.01	20
25-JAN-90	43.3	1.5	103.7	15.7	100	4.73	-1.00	13.6	0.85	480	230	0.31	0.05	0.15	0.07	0.18	0.70	0.03	0.02	21
31-JAN-90	46.3	2.5	108.0	7.4	100	4.68	-1.00	15.0	0.90	511	242	0.29	0.07	0.29	0.10	0.21	1.00	0.03	0.03	30
07-FEB-90	44.3	2.1	113.3	10.5	100	4.63	-1.40	16.0	0.90	512	264	0.24	0.04	0.12	0.06	0.15	0.70	0.03	0.01	32
21-FEB-90	48.0	2.6	120.2	28.7	100	4.57	-1.40	16.2	0.80	537	246	0.22	0.04	0.13	0.06	0.16	0.70	0.03	0.01	35
28-FEB-90	67.5	3.3	139.3	5.8	100	4.50	-1.70	17.5	0.95	555	248	0.17	0.04	0.11	0.09	0.16	0.50	0.03	0.01	26
07-MAR-90	55.7	3.4	130.9	28.5	100	4.57	-1.40	17.4	1.05	544	239	0.27	0.05	0.18	0.11	0.22	1.10	0.03	0.01	28
12-MAR-90	49.0	1.7	137.0	2.6	100															

Table 6

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond(25) (ug/L)	SO4 (ug/L)	Nitrate (ug/L)	Anomalous (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
15-MAR-90	33.7	0.6	102.6	10.8	100	4.80	-0.94	9.5	0.50	369	210	0.08	0.02	0.08	0.06	0.14	0.60	0.03	0.01	26
21-MAR-90	25.3	3.2	62.1	19.1	75	4.92	-0.67	7.8	0.35	297	198	0.05	0.01	0.05	0.05	0.14	0.40	0.03	0.00	25
28-MAR-90	21.8	3.2	70.5	10.3	50															
04-APR-90	20.0	1.5	62.1	5.8	50															
12-APR-90	14.3	2.3	30.8	11.9	25															
18-APR-90	12.0	0.5	35.4	2.3	25															
19-APR-90	0.0	0.0	0.0	0.0	0															
12-DEC-90	18.5	0.5	31.6	1.3	100	4.64	-1.10	13.5	0.70	359	59	0.16	0.03	-0.04	0.16	0.24	0.50	0.02	0.00	19
19-DEC-90	21.2	1.8	40.7	1.3	100	4.57	-1.20	14.6	1.15	330	101	0.20	0.04	0.20	0.07	0.13	0.70	0.11	0.01	72
04-JAN-91	26.0	4.2	49.1	3.2	100	4.67	-1.10	10.5	0.70	281	96	0.16	0.03	0.13	0.10	0.17	0.70	0.05	0.01	31
09-JAN-91	34.7	4.2	69.0	3.0	100	4.56	-1.20	11.7	0.50	337	107	0.10	0.03	0.09	0.08	0.12	0.70	0.02	0.01	20
16-JAN-91	48.0	6.0	106.4	10.5	100	4.50	-1.40	14.7	0.70	419	121	0.11	0.02	0.06	0.06	0.09	0.50	0.03	0.01	23
23-JAN-91	44.7	1.2	107.2	4.3	100	4.40	-1.80	18.3	1.20	477	134	0.21	0.04	0.10	0.09	0.16	0.70	0.02	0.01	19
30-JAN-91	58.0	2.6	130.1	4.8	100	4.45	-1.70	16.9	1.10	485	137	0.25	0.05	0.13	0.14	0.22	0.70	0.09	0.02	32
05-FEB-91	46.7	2.1	124.0	9.3	100	4.55	-1.30	17.1	1.15	494	140	0.21	0.04	0.09	0.09	0.16	0.60	0.03	0.01	23
13-FEB-91	39.8	1.5	121.7	13.4	100															
18-FEB-91	41.2	3.3	95.7	4.8	100	4.58	-1.20	12.4	0.90	380	113	0.18	0.04	0.17	0.07	0.15	1.20	0.03	0.02	21
27-FEB-91	49.0	3.0	127.8	3.5	100	4.48	-1.60	16.1	0.85	470	125	0.16	0.03	0.08	0.08	0.14	0.60	0.03	0.00	25
27-FEB-91	58.0	1.7	159.9	5.3	100	4.45	-1.60	15.6	0.80	482	145	0.16	0.03	0.07	0.07	0.14	0.50	0.06	0.04	46
04-MAR-91	49.0	0.8	135.1	1.3	100	4.62	-1.20	11.5	0.50	363	124	0.07	0.02	0.06	0.07	0.13	0.70			
08-MAR-91	52.0	1.7	152.3	18.8	100	4.58	-1.30	11.9	0.50	370	120	0.08	0.02	0.06	0.01	0.11	0.60			
13-MAR-91	48.8	2.1	145.1	7.9	100	4.73	-0.86	9.7	0.45	305	105	0.08	0.02	0.06	0.09	0.18	0.70			
19-MAR-91	41.3	2.1	130.9	9.3	100	4.63	-1.10	11.0	0.55	339	122	0.09	0.02	0.06	0.05	0.12	0.40			
21-MAR-91	42.0	4.0	145.1	4.0	100	4.77	-0.84	8.8	0.40	274	123					0.12	0.50			
25-MAR-91	40.8	2.9	135.2	11.8	100	4.91	-0.82	6.5	0.30	217	108	0.07	0.02	0.08	0.06	0.12	0.50			
28-MAR-91	26.3	5.8	83.5	27.8	100	4.91	-0.82	6.5	0.30	217	108	0.07	0.02	0.08	0.06	0.12	0.50			
02-APR-91	37.0	1.0	122.5	6.1	100	4.91	-0.32	9.2	0.40	235	134				0.19	0.35	1.20			
08-APR-91	11.3	3.1	44.3	10.5	50															
11-APR-91	10.3	2.1	40.3	6.1	10															
12-APR-91	0.0	0.0	0.0	0.0	0															
19-APR-91	0.0	0.0	16.3	3.5	100	4.55	-1.60	11.4	0.25	434	37	0.02	0.00	0.03	0.12	0.25	0.40	0.01	0.00	3
20-APR-91	0.0	0.0	16.3	3.5	100	4.62	-1.10	13.9	0.85	445	83	0.20	0.06	0.28	0.20	0.39	1.50	0.10	0.00	
23-APR-91	16.7	0.8	27.0	6.9	100	4.46	-1.60	12.6	0.95	346	105	0.02	0.06	0.08	0.18	0.50	0.03	0.01	12	
17-JAN-92	39.2	5.8	59.1	10.6	100	4.40	-1.50	18.4	1.20	437	155	0.12	0.03	0.08	0.37	0.82	0.80	0.08	0.01	14
23-JAN-92	38.7	3.3	77.4	1.3	100	4.45	-1.30	19.4	1.50	530	230	0.16	0.03	0.10	0.11	0.25	0.60	0.05	0.02	0
30-JAN-92	43.3	1.5	79.7	13.4	100	4.42	-2.10	21.0	1.50	530	230	0.16	0.03	0.10	0.11	0.25	0.60	0.05	0.02	0
06-FEB-92	42.7	1.3	78.2	8.7	100	4.40	-2.10	21.0	1.50	605	248	0.19	0.04	0.15	0.08	0.20	1.00	0.25	0.02	25
13-FEB-92	48.0	3.5	89.6	4.8	100	4.36	-2.80	22.0	1.50	647	272	0.16	0.03	0.09	0.10	0.22	1.00	0.06	0.01	13
20-FEB-92	54.3	2.3	105.7	15.6	100	4.40	-2.90	20.1	1.35	541	244	0.15	0.03	0.10	0.11	0.22	0.90	0.03	0.01	23
27-FEB-92	69.5	1.3	137.8	10.3	100	4.34	-2.20	21.0	1.65	608	254	0.18	0.04	0.13	0.10	0.23	1.00	0.04	0.02	0
04-MAR-92	72.0	3.1	127.8	8.3	100	4.52	-1.40	15.5	1.30	380	185	0.15	0.03	0.10	0.09	0.20	0.90	0.04	0.02	12
13-MAR-92	63.3	2.1	172.9	12.1	100	4.60	-1.20	10.4	0.90	280	150	0.06	0.01	0.05	0.04	0.11	0.80	0.06	0.01	6
19-MAR-92	72.0	1.0	172.9	2.3	100	4.52	-1.30	12.2	1.10	395	221	0.10	0.02	0.07	0.08	0.17	0.70	0.14	0.01	8
25-MAR-92	55.8	3.0	168.3	6.9	100	4.56	-1.40	13.8	1.41	441	252	0.14	0.03	0.07	0.09	0.21	0.40	0.12	0.01	20
01-APR-92	43.2	0.8	156.1	13.5	100	4.47	-1.70	15.2	1.35	420	250	0.16	0.03	0.11	0.08	0.22	1.10	0.12	0.02	18
08-APR-92	42.3	1.9	141.6	13.8	100	4.56	-1.30	12.9	0.90	385	232	0.11	0.02	0.09	0.06	0.18	0.70	0.07	0.01	8
15-APR-92	42.0	2.8	134.7	9.3	100	4.62	-1.10	13.6	1.05	393	232	0.15	0.03	0.10	0.07	0.19	0.90	0.05	0.02	25
21-APR-92	24.8	2.8	89.6	13.7	100															
28-APR-92	15.7	7.0	50.7	18.7	60															
24-APR-92	7.3	0.3	29.3	7.0	5															
28-MAY-92	0.0	0.0	0.0	0.0	0															

# HARP LAKE SNOW CORE DATA SUMMARY HPST13

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														Al (mg/L)
	MEAN (cm)	S.D. (mm)	MEAN (mm)	S.D. (mm)		PH	ALK (mg/L)	Cond25 (uans/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	
21-JAN-88	36.3	1.4	92.7	2.3	100	4.50	-1.80	17.2	1.25	475	155	0.38		0.08	0.06	0.23				
09-FEB-88	39.8	3.3	95.0	2.3	100	4.71	-1.12	12.3	0.70	391	109	0.22		0.04	0.03	0.19				
23-FEB-88	71.7	5.1	161.5	13.0	100	4.49	-1.90	17.3	1.05	575	220	0.30		0.10	0.05	0.22				
08-MAR-88	27.0	1.3	171.4	2.6	100	4.43	-2.00	22.3	1.30	705	275	0.42		0.06	0.05	0.25				
15-MAR-88	27.9	2.5	183.6	23.2	100	4.43	-2.10	20.8	1.23	700	310	0.28		0.05	0.02	0.22				
29-MAR-88	19.2	1.4	166.8	9.3	100	4.85	-0.88	8.7	0.45	305	170	0.08		0.04	0.02	0.16				
31-MAR-88	16.0	1.8	134.7	12.6	100															
06-APR-88	2.8	1.4	186.6	13.2	33	5.04	-0.51	5.3	0.20	115	135	0.06		0.08	0.02	0.13				
08-APR-88	1.4	0.1	3.3	4.6	33															
12-APR-88	0.0	0.0	0.0	0.0	0															
09-JAN-89	25.3	3.3	36.9	10.6	100	4.64	-1.20	12.3	0.75	320	150	0.20		0.05	0.04	0.19				
23-JAN-89	37.3	0.6	76.7	0.0	100	4.46	-1.60	19.5	1.40	575	290	0.34		0.11	0.07	0.23				
06-FEB-89	39.3	0.6	61.4	6.6	100	4.34	-1.20	18.0	1.50	330	320	0.46		0.15	0.09	0.36				
20-FEB-89	67.3	2.3	115.6	12.8	100	4.45	-1.80	19.9	1.30	539	195	0.40		0.08	0.08	0.20				
06-MAR-89	61.3	1.3	142.4	27.2	100	4.36	-2.20	21.1	1.40	575	200	0.32		0.08	0.06	0.20				
16-MAR-89	55.0	2.0	127.1	16.0	100															
21-MAR-89	78.0	4.4	185.2	7.0	100	4.54	-1.50	15.1	0.95	500	225	0.24		0.06	0.04	0.22				
28-MAR-89	40.3	4.0	104.2	6.1	100	4.75	-0.86	12.2	0.65	420	225	0.18		0.07	0.04	0.16				
03-APR-89	31.2	0.8	90.4	12.1	100	5.01	-0.49	7.4	0.40	233	180	0.08		0.03	0.00	0.12				
06-APR-89	29.7	1.2	90.4	10.5	100															
10-APR-89	25.3	1.5	78.2	8.7	100	5.15	-0.24	6.5	0.45	208	185	0.32		0.06	0.03	0.12				
13-APR-89	34.5	4.3	74.4	6.1	100	5.23	-0.14	5.1	0.15	130	105	0.06		0.08	0.02	0.11				
17-APR-89	17.3	1.2	55.2	5.8	100	5.08	-0.14	5.1	0.15	130	105	0.06		0.08	0.02	0.11				
21-APR-89	13.0	3.0	32.3	7.4	100	5.08	-0.26	6.3	0.15	115	70	0.18		0.13	0.04	0.11				
24-APR-89	10.7	1.2	23.9	6.1	100	5.08	-0.26	6.3	0.15	115	70	0.18		0.13	0.04	0.11				
25-APR-89	0.0	0.0	0.0	0.0	0															
5-DEC-89	26.3	0.3	27.7	3.3	100	4.32	-1.20	15.2	0.75	509	127	0.31	0.05	0.07	0.10	0.19	0.60	0.04	0.01	35
2-DEC-89	25.8	2.8	33.1	1.0	100	4.53	-1.10	16.7	0.93	492	180	0.30	0.05	0.08	0.10	0.21	0.60	0.05	0.01	36
9-DEC-89	33.0	1.7	28.5	2.3	100	4.48	-1.30	17.5	0.80	660	172	0.33	0.06	0.10	0.13	0.25	0.50	0.08	0.01	31
8-DEC-89	41.8	0.8	47.6	8.1	100	4.37	-1.30	20.5	0.85	630	153	0.35	0.04	0.10	0.17	0.35	0.50	0.04	0.01	39
3-DEC-89	35.3	1.3	89.1	7.9	100	4.58	-1.70	20.7	1.00	618	180	0.35	0.07	0.13	0.15	0.30	0.70	0.02	0.00	12
2-JAN-90	44.0	1.0	88.1	8.3	100	4.40	-2.40	22.4	0.93	620	203	0.23	0.04	0.08	0.16	0.30	0.70	0.03	0.01	22
9-JAN-90	35.8	2.0	108.7	9.0	100	4.36	-2.70	23.3	1.05	680	261	0.23	0.04	0.06	0.12	0.20	0.90	0.02	0.01	26
13-JAN-90	35.0	2.0	72.1	0.0	100	3.85	-6.00	60.0	0.85	1800	210	0.19	0.03	0.03	0.10	0.20	0.70	0.02	0.00	19
20-JAN-90	49.3	1.3	111.8	11.5	100	4.47	-1.80	19.2	1.05	660	215	0.22	0.04	0.09	0.10	0.21	0.70	0.02	0.00	18
06-FEB-90	49.0	1.7	127.8	10.6	100	4.48	-1.40	19.8	0.99	611	236	0.23	0.04	0.07	0.10	0.24	0.60	0.04	0.01	38
13-FEB-90	42.7	0.8	124.8	10.6	100	4.63	-1.40	15.2	0.93	494	236	0.17	0.03	0.05	0.08	0.18	0.40	0.03	0.00	38
20-FEB-90	45.3	1.2	130.9	20.8	100	4.71	-1.00	17.3	0.85	432	272	0.20	0.04	0.10	0.15	0.27	6.20	0.05	0.00	39
27-FEB-90	36.0	1.8	137.8	4.8	100	4.50	-1.80	17.5	0.80	583	252	0.17	0.04	0.10	0.09	0.16	0.50	0.03	0.00	25
06-MAR-90	31.0	0.8	140.8	14.3	100	4.54	-1.50	16.8	0.90	564	238	0.20	0.04	0.15	0.10	0.20	0.80	0.03	0.00	32
12-MAR-90	44.7	1.5	136.1	8.1	100															
15-MAR-90	28.0	3.0	33.8	7.4	90	4.84	-0.88	8.9	0.35	355	199	0.07	0.02	0.06	0.07	0.18	0.70	0.04	0.00	35
20-MAR-90	13.0	2.6	33.8	7.4	90	4.91	-0.38	7.3	0.30	233	199	0.06	0.01	0.03	0.07	0.18	0.90	0.07	0.00	67
27-MAR-90	6.8	0.3	6.3	0.3	25															
03-APR-90	16.0	4.4	44.5	8.3	25															
12-APR-90	5.7	1.2	4.8	3.5	10															
18-APR-90	0.0	0.0	0.0	0.0	0															

Table 7



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk. (mg/L)	Cond25 (µmhos/cm)	SO4 (mg/L)	Nitrate (µg/L)	Ammonia (µg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
12-DEC-90	9.8	0.3	19.3	0.0	100	4.55	-1.40	19.2	0.85	465	125	0.20	0.03	0.05	0.72	1.18	0.60	0.04	0.00	32
19-DEC-90	14.8	2.4	27.0	2.6	100	4.61	-1.10	14.6	0.90	432	118	0.26	0.04	0.09	0.13	0.19	0.60	0.04	0.01	38
04-JAN-91	39.3	2.1	60.6	2.3	100	4.57	-1.40	15.0	0.55	449	86	0.16	0.03	0.07	0.39	0.63	0.50	0.06	0.01	50
09-JAN-91	38.3	2.1	76.6	2.3	100	4.62	-0.99	24.3	0.85	389	83	0.26	0.06	0.20	1.93	3.65	0.90	0.09	0.01	47
17-JAN-91	41.3	1.2	85.6	7.8	100	4.47	-1.50	15.2	0.70	420	120	0.11	0.02	0.06	0.07	0.11	0.60	0.02	0.00	18
23-JAN-91	43.7	1.4	96.0	10.0	100	4.52	-1.40	19.8	1.33	484	142	0.33	0.06	0.13	0.59	0.95	2.80	0.05	0.01	21
30-JAN-91	57.3	1.2	117.9	7.9	100	4.35	-2.00	18.7	0.85	569	132	0.17	0.03	0.04	0.12	0.23	0.50	0.03	0.00	25
05-FEB-91	43.2	0.8	110.3	1.3	100	4.45	-1.90	17.2	0.85	503	132	0.14	0.03	0.04	0.10	0.18	0.50	0.07	0.00	49
08-FEB-91	38.8	1.9	115.6	6.9	100															
13-FEB-91	43.0	1.0	109.5	7.4	100	4.52	-1.30	14.2	0.80	425	111	0.26	0.07	0.10	0.20	0.34	1.50	0.03	0.01	22
20-FEB-91	48.3	1.2	134.7	8.1	100	4.48	-1.70	14.9	0.75	436	114	0.12	0.02	0.04	0.07	0.14	0.50	0.03	0.00	29
27-FEB-91	52.0	0.5	138.5	6.1	100	4.44	-1.60	16.6	0.85	491	159	0.16	0.03	0.05	0.17	0.29	0.50	0.04	0.01	32
04-MAR-91	40.0	1.8	130.1	13.0	100	4.86	-0.61	16.3	0.60	348	124	0.23	0.04	0.17	1.26	1.95	2.30			
08-MAR-91	43.0	0.0	137.0	9.3	100	4.69	-1.10	9.5	0.35	300	97	0.08	0.02	0.07	0.06	0.12	0.70			
13-MAR-91	39.3	0.8	139.3	10.8	100	4.71	-1.00	10.0	0.40	300	105	0.08	0.02	0.04	0.16	0.29	0.80			
19-MAR-91	27.2	1.0	103.4	3.5	100	4.94	-0.60	5.8	0.15	194	95	0.03	0.01	0.02	0.06	0.13	0.20			
21-MAR-91	35.0	3.5	113.3	12.8	100															
25-MAR-91	29.7	2.1	108.0	8.7	100	5.01	-0.45	5.1	0.35	172	94					0.13	0.10			
28-MAR-91	16.3	1.4	50.7	7.0	100	5.03	-0.18	4.2	0.20	110	98	0.16	0.02	0.19	0.09	0.19	1.50			
02-APR-91	16.7	0.6	58.3	2.3	90	5.01	-0.45	5.8	0.25	148	89	0.08	0.02	0.06	0.07	0.14	0.60			
05-APR-91	11.0	3.6	36.1	19.5	75															
08-APR-91	0.0	0.0	0.0	0.0	0															
19-DEC-91	15.7	0.3	10.9	0.0	100	4.72	-0.85	7.5	0.25	299	38	0.04	0.01	0.03	0.20	0.34	0.20	0.03	0.00	4
09-JAN-92	11.8	1.2	20.9	2.6	100	4.69	-1.00	13.6	0.55	342	76	0.10	0.03	0.06	0.70	1.15	0.70	0.17	0.01	
17-JAN-92	29.8	0.3	48.4	7.0	100	4.57	-1.30	11.9	0.75	330	93	0.11	0.02	0.07	0.12	0.21	0.50	0.03	0.00	13
23-JAN-92	30.5	0.5	53.0	9.5	100	4.62	-1.20	11.4	0.75	349	104	0.11	0.02	0.05	0.21	0.36	0.50	0.10	0.00	16
30-JAN-92	38.7	2.5	79.7	11.8	100	4.44	-2.00	18.5	1.20	545	170	0.19	0.03	0.09	0.23	0.39	1.00	0.05	0.01	6
06-FEB-92	35.0	1.8	63.7	7.4	100	4.41	-2.10	20.3	1.35	602	200	0.23	0.04	0.12	0.20	0.38	0.90	0.08	0.01	18
13-FEB-92	39.7	3.5	84.3	5.8	100	4.45	-2.40	20.9	1.35	704	251	0.32	0.05	0.10	0.24	0.44	0.90	0.12	0.01	29
20-FEB-92	46.0	1.7	98.8	1.3	100	4.35	-2.30	22.1	1.35	615	224	0.19	0.03	0.07	0.19	0.37	0.90	0.04	0.01	4
27-FEB-92	57.3	4.4	128.6	11.5	100	4.35	-2.30	22.8	1.40	603	220	0.19	0.03	0.07	0.35	0.61	0.90	0.05	0.01	6
04-MAR-92	61.0	2.3	143.9	1.3	100	4.38	-2.10	20.7	1.40	570	210	0.20	0.04	0.07	0.16	0.33	0.80	0.05	0.01	13
13-MAR-92	58.3	0.6	148.5	3.5	100	4.41	-1.90	16.9	1.25	445	180	0.10	0.02	0.04	0.07	0.18	0.60	0.04	0.00	6
19-MAR-92	56.8	2.9	169.9	5.3	100	4.64	-1.10	8.9	0.75	273	135	0.06	0.01	0.03	0.04	0.11	0.50	0.05	0.00	0
25-MAR-92	51.7	1.0	164.5	9.3	100	4.55	-1.50	13.8	0.95	418	180	0.14	0.02	0.08	0.11	0.24	0.60	0.06	0.01	14
01-APR-92	40.0	0.0	131.7	12.8	100	4.55	-1.30	12.4	0.85	386	170	0.14	0.02	0.06	0.12	0.27	0.70	0.14	0.01	20
08-APR-92	24.7	4.6	76.6	19.6	100	4.73	-0.97	7.2	0.35	207	99	0.04	0.01	0.08	0.06	0.15	1.00	0.07	0.00	6
15-APR-92	22.0	3.0	77.4	14.7	100	5.22	-0.15	4.1	0.20	159	127	0.04	0.01	0.02	0.03	0.12	0.20	0.14	0.01	190
21-APR-92	8.5	1.8	27.7	5.3	10															
24-APR-92	0.0	0.0	0.0	0.0	0															

Table 7

HARP LAKE SNOW CORE DATA SUMMARY  
HPST14

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D.	MEAN (mm)	S.D.		PH	Alk (mg/L)	Cond25 (conductivity)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
21-JAN-88	38.0	4.4	95.0	9.2	100	4.52	-1.70	16.1	1.20	440	170	0.32		0.07	0.05	0.17				
09-FEB-88	43.0	1.7	94.2	8.0	100	4.66	-1.31	13.0	0.80	408	170	0.20		0.07	0.04	0.18				
23-FEB-88	83.3	2.5	180.6	14.7	100	4.45	-2.00	21.8	1.25	635	260	0.30		0.08	0.05	0.19				
08-MAR-88	32.3	0.8	204.3	1.3	100	4.41	-3.10	21.7	1.35	690	245	0.38		0.10	0.06	0.20				
15-MAR-88	34.6	0.6	242.5	8.0	100	4.60	-1.40	17.4	1.40	650	210	0.34		0.20	0.11	0.19				
29-MAR-88	25.3	0.4	212.7	15.3	100	4.71	-1.20	13.9	0.90	435	220	0.24		0.08	0.04	0.20				
31-MAR-88	23.1	0.1	198.9	5.8	100	4.96	-0.69	6.7	0.40	200	125	0.12		0.09	0.02	0.12				
06-APR-88	13.3	0.8	114.1	7.0	100	4.96	-0.69	6.7	0.40	200	125	0.12		0.09	0.02	0.12				
12-APR-88	11.4	1.4	85.8	8.3	100	5.15	-0.57	5.1	0.20	165	160	0.06		0.05	0.01	0.10				
14-APR-88	3.0	0.7	20.9	4.8	33	5.23	-0.33	4.8	0.45	160	165	0.10		0.04	0.02	0.11				
19-APR-88	7.3	1.6	42.3	15.0	10	5.23	-0.33	4.8	0.45	160	165	0.10		0.04	0.02	0.11				
21-APR-88	9.1	1.0	50.7	8.7	10															
09-JAN-89	37.0	3.0	43.8	9.5	100	4.70	-1.10	11.5	0.85	345	155	0.32		0.17	0.06	0.16				
23-JAN-89	53.7	2.1	117.9	4.0	100	4.50	-1.50	15.7	1.15	505	265	0.28		0.08	0.05	0.23				
06-FEB-89	59.7	0.6	111.8	7.0	100	4.48	-1.70	18.2	1.50	535	310	0.34		0.10	0.06	0.68				
20-FEB-89	87.7	6.3	167.6	6.6	100	4.84	-0.67	15.2	1.50	564	170	0.62		0.46	0.16	0.19				
06-MAR-89	85.0	1.0	176.8	31.1	100	4.39	-2.00	20.5	1.45	626	230	0.34		0.11	0.07	0.20				
16-MAR-89	71.3	1.5	195.1	24.5	100	4.49	-1.60	15.5	1.15	550	215	0.30		0.06	0.06	0.20				
21-MAR-89	89.0	1.7	227.2	10.8	100	4.68	-1.10	13.1	0.65	400	175	0.18		0.07	0.04	0.16				
28-MAR-89	64.0	5.3	192.0	23.9	100	5.04	-0.67	7.8	0.45	248	160	0.18		0.08	0.00	0.10				
03-APR-89	33.7	1.5	183.6	36.6	100	5.04	-0.67	7.8	0.45	248	160	0.18		0.08	0.00	0.10				
06-APR-89	53.7	2.0	161.5	21.0	100	5.07	-0.37	9.9	0.50	248	165	0.20		0.14	0.03	0.11				
10-APR-89	48.7	0.6	131.7	18.2	100	5.07	-0.37	9.9	0.50	248	165	0.20		0.14	0.03	0.11				
15-APR-89	56.5	0.9	150.0	15.9	100	5.27	-0.06	6.2	0.35	235	155	0.26		0.06	0.03	0.12				
17-APR-89	44.3	2.9	128.6	23.1	100	5.27	-0.06	6.2	0.35	235	155	0.26		0.06	0.03	0.12				
21-APR-89	40.0	1.0	140.8	4.6	100	5.17	-0.30	6.2	0.40	210	155	0.12		0.06	0.02	0.13				
24-APR-89	33.0	2.6	114.9	6.6	100															
27-APR-89	12.3	1.2	36.1	7.0	50															
01-MAY-89	21.7	2.3	65.2	15.9	1															
02-MAY-89	0.0	0.0	0.0	0.0	0															
05-DEC-89	28.2	1.4	35.4	2.3	100	4.50	-1.30	14.3	0.80	569	118	0.28	0.07	0.15	0.06	0.15	0.70	0.04	0.01	31
12-DEC-89	28.3	1.5	30.0	4.8	100	4.43	-1.40	16.7	0.95	494	180	0.26	0.05	0.11	0.09	0.20	0.70	0.03	0.01	26
19-DEC-89	42.3	3.8	31.6	11.5	100	4.47	-1.40	16.1	1.00	640	218	0.34	0.06	0.24	0.11	0.22	0.60	0.06	0.01	39
28-DEC-89	43.3	3.1	32.2	7.4	100	4.35	-1.90	20.1	0.80	695	151	0.24	0.05	0.12	0.13	0.26	0.60	0.04	0.01	26
02-JAN-90	43.7	1.5	70.5	3.5	100	4.40	-1.60	20.3	0.90	637	142	0.32	0.07	0.16	0.11	0.22	0.90	0.04	0.01	29
09-JAN-90	52.5	2.8	85.0	12.6	100	4.44	-2.10	19.9	0.90	380	187	0.27	0.06	0.28	0.10	0.25	0.90	0.03	0.01	22
16-JAN-90	66.0	2.6	122.5	16.0	100	4.49	-2.00	19.6	0.95	600	218	0.22	0.05	0.20	0.08	0.14	0.80	0.02	0.01	23
23-JAN-90	68.0	2.0	85.8	0.0	100	4.51	-1.30	18.1	0.90	560	210	0.16	0.03	0.15	0.10	0.21	0.60	0.02	0.00	19
30-JAN-90	35.7	3.4	131.5	9.3	100	4.38	-1.50	16.6	0.90	520	210	0.16	0.04	0.18	0.09	0.22	0.60	0.03	0.00	24
06-FEB-90	51.3	4.9	143.9	13.4	100	4.52	-1.60	18.0	0.90	387	244	0.19	0.04	0.12	0.08	0.18	0.60	0.07	0.01	59
13-FEB-90	51.3	2.3	153.1	13.4	100	4.60	-1.50	17.2	1.05	399	235	0.25	0.05	0.17	0.07	0.18	0.70	0.05	0.01	36
20-FEB-90	56.3	2.9	147.7	8.3	100	4.38	-1.20	17.9	1.00	396	270	0.24	0.04	0.16	0.07	0.16	0.70	0.03	0.01	28
27-FEB-90	73.0	1.0	185.2	27.7	100	4.56	-1.40	16.1	0.80	552	247	0.18	0.04	0.14	0.10	0.18	0.40	0.04	0.01	39
06-MAR-90	70.2	2.0	183.6	12.6	100	4.56	-2.20	14.9	1.00	533	270	0.23	0.05	0.16	0.10	0.19	0.60	0.03	0.01	26
13-MAR-90	64.0	1.7	202.0	3.5	100															

Table 8



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														Al (mg/L)
	MEAN	S.D.	MEAN	S.D.		PH	Alk (mg/L)	Cond23 (um/cm-cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	
15-MAR-90	49.71	0.6	159.9	31.2	100	4.83	-0.67	9.7	0.45	382	220	0.11	0.02	0.10	0.07	0.16	0.50	0.05	0.00	48
20-MAR-90	37.3	1.2	126.3	2.6	100	4.85	-0.87	9.6	0.50	378	204	0.11	0.03	0.12	0.14	0.23	0.40	0.04	0.00	42
27-MAR-90	37.2	2.5	118.7	8.1	75	4.77	-0.75	10.8	0.50	385	179	0.00	0.03	0.16	0.12	0.23	0.40	0.03	0.00	25
03-APR-90	30.7	6.3	108.7	11.5	75															
12-APR-90	23.3	3.5	76.6	10.5	75															
18-APR-90	36.3	2.5	111.8	9.3	75															
19-APR-90	0.0	0.0	0.0	0.0	0															
19-APR-90	0.0	0.0	0.0	0.0	0	4.58	-1.40	19.6	0.85	439	117	0.22	0.04	0.07	0.94	1.42	0.50	0.04	0.01	35
12-DEC-90	15.0	0.5	27.7	2.6	100	4.56	-1.30	14.1	0.85	394	111	0.18	0.04	0.07	0.17	0.28	0.40			
19-DEC-90	18.2	0.3	27.0	5.8	100	4.71	-1.00	12.0	0.65	350	92	0.22	0.06	0.26	0.36	0.60	0.90	0.05	0.01	50
04-JAN-91	47.7	0.6	78.2	1.3	100	4.63	-0.90	13.2	0.60	389	77	0.19	0.04	0.10	0.76	1.24	1.00	0.11	0.01	47
09-JAN-91	47.7	5.9	88.9	1.3	100	4.45	-1.60	15.7	0.70	463	104	0.20	0.04	0.08	0.07	0.20	0.60	0.03	0.01	25
17-JAN-91	43.7	1.2	102.7	17.2	100	4.45	-1.80	17.6	0.95	476	119	0.14	0.03	0.08	0.09	0.16	0.40	0.03	0.01	26
23-JAN-91	45.3	3.1	82.0	9.5	100	4.45	-1.50	19.3	0.90	568	120	0.21	0.04	0.06	0.44	0.75	0.50	0.03	0.01	31
30-JAN-91	61.0	3.5	108.0	0.0	100	4.41	-1.50	19.9	0.90	568	120	0.21	0.04	0.06	0.44	0.75	0.50	0.03	0.01	31
05-FEB-91	48.0	4.0	118.7	13.2	100	4.38	-1.90	18.1	1.00	529	119	0.07	0.05	0.07	0.16	0.30	0.50	0.20	0.01	144
08-FEB-91	44.7	3.5	124.0	4.8	100															
13-FEB-91	52.3	4.7	120.2	17.9	100	4.41	-1.80	16.5	0.95	501	126	0.17	0.03	0.06	0.11	0.22	0.50	0.03	0.01	26
20-FEB-91	54.7	1.2	143.9	2.6	100	4.44	-1.70	15.6	0.75	483	120	0.16	0.03	0.05	0.10	0.19	0.40	0.03	0.01	24
27-FEB-91	57.7	1.0	148.5	7.4	100	4.43	-1.70	15.8	0.75	485	135	0.16	0.04	0.06	0.07	0.15	0.40	0.03	0.01	30
04-MAR-91	49.0	1.0	136.3	14.3	100	4.63	-1.10	11.4	0.50	378	107	0.18	0.05	0.08	0.15	0.28	1.10			
08-MAR-91	54.7	0.6	148.2	17.5	100	4.51	-1.50	13.3	0.70	460	120	0.29	0.05	0.15	0.39	0.57	2.00			
13-MAR-91	54.2	0.8	157.6	6.1	100	4.52	-1.50	14.6	0.70	490	120	0.16	0.04	0.11	0.09	0.20	0.70			
19-MAR-91	48.3	0.8	160.7	16.1	100	4.67	-1.10	9.8	0.40	316	102	0.08	0.02	0.04	0.06	0.13	0.30			
21-MAR-91	55.0	2.6	172.2	13.0	100															
25-MAR-91	47.3	4.0	170.6	11.5	100	4.75	-0.92	7.9	0.00	269	98					0.12	0.10			
28-MAR-91	42.2	1.4	137.8	11.3	100	5.07	-0.63	5.0	0.30	203	99	0.12	0.03	0.05	0.06	0.12	0.30			
02-APR-91	43.0	2.8	156.1	5.8	100	4.95	-0.58	7.2	0.35	222	99	0.11	0.02	0.05	0.11	0.19	0.40			
05-APR-91	34.0	6.1	126.3	21.3	100															
08-APR-91	22.5	0.0	90.4	4.0	75															
11-APR-91	13.3	2.9	33.1	4.0	10															
15-APR-91	6.0	1.8	19.3	4.0	10															
18-APR-91	0.0	0.0	0.0	0.0	0															
19-DEC-91	20.5	4.1	178.8	8.1	100	4.70	-1.00	7.5	0.34	320	50	0.05	0.01	0.05	0.17	0.28	0.50	0.05	0.00	
09-JAN-92	19.7	3.8	41.5	5.8	100	4.64	-1.10	12.4	0.80	363	82	0.17	0.04	0.16	0.13	0.25	1.50	0.17	0.02	
17-JAN-92	33.2	4.2	62.1	3.5	100	4.67	-1.00	9.4	0.65	277	74	0.11	0.03	0.14	0.09	0.17	0.70	0.09	0.01	15
23-JAN-92	35.2	0.8	57.5	5.8	100	4.55	-1.60	11.4	0.75	384	109	0.13	0.02	0.07	0.17	0.31	0.50	0.06	0.01	16
30-JAN-92	46.7	1.5	114.1	23.1	100	4.51	-1.60	15.9	1.15	470	140	0.17	0.04	0.11	0.11	0.24	0.60	0.13	0.01	25
05-FEB-92	46.8	4.7	79.7	26.1	100	4.47	-1.90	18.2	1.15	534	179	0.19	0.04	0.12	0.09	0.22	0.90	0.06	0.01	11
08-FEB-92	54.3	0.6	111.0	6.1	100	4.45	-1.90	19.9	1.40	636	237	0.29	0.05	0.15	0.12	0.28	1.20	0.05	0.01	16
20-FEB-92	57.7	0.6	123.3	5.3	100	4.41	-2.00	20.4	1.40	601	214	0.30	0.06	0.14	0.13	0.31	1.20	0.05	0.01	4
27-FEB-92	63.5	1.7	135.5	16.6	100	4.46	-1.70	18.2	1.35	538	203	0.24	0.05	0.11	0.14	0.30	1.00	0.06	0.01	14
04-MAR-92	81.3	0.6	172.2	5.8	100	4.47	-1.60	10.7	0.90	235	116	0.06	0.01	0.06	0.05	0.12	0.36	1.00	0.05	0.01
13-MAR-92	66.7	1.5	188.2	13.4	100	4.61	-1.10	10.7	0.90	235	116	0.06	0.01	0.06	0.05	0.12	0.36	1.00	0.05	0.01
19-MAR-92	64.2	1.0	190.5	1.3	100	4.60	-1.20	8.4	0.95	296	141	0.10	0.02	0.09	-0.09	0.17	0.60	0.07	0.00	10
23-MAR-92	64.5	2.6	213.4	10.6	100	4.72	-1.00	8.9	0.75	318	152	0.12	0.03	0.06	0.05	0.15	0.60	0.10	0.01	10
01-APR-92	53.8	0.8	206.6	6.6	100	4.61	-1.10	10.5	0.85	308	147	0.09	0.02	0.06	0.08	0.19	0.60	0.09	0.01	18
08-APR-92	49.2	0.3	211.1	7.4	100	4.91	-0.50	8.7	0.70	266	143	0.09	0.02	0.06	0.21	0.43	1.20	0.07	0.01	20
15-APR-92	48.3	0.8	180.6	13.8	100	5.07	-0.32	5.6	0.85	307	169	0.13	0.07	0.01	0.08	0.11	0.26	1.50	0.02	0.00
24-APR-92	33.8	2.3	127.1	2.3	100	5.49	0.14	4.8	0.20	154	126	0.13	0.02	0.08	0.11	0.23	0.30	0.12	0.01	6
28-APR-92	10.3	2.3	27.7	12.6	25															
01-MAY-92	0.0	0.0	0.0	0.0	0															

Table 8 (cont'd)

# HARD LAKE SNOW CORE DATA SUMMARY HPST16

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENT		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Com25 (micromoles)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
21-JAN-88	37.5	6.8	82.8	15.6	100	4.70	-1.10	12.3	1.30	425	115	0.46		0.34	0.07	0.53				
09-FEB-88	43.3	7.5	110.3	5.8	100	4.57	-1.50	15.9	1.05	467	170	0.32		0.08	0.05	0.21				
23-FEB-88	80.3	7.8	185.2	13.0	100	4.47	-2.00	18.6	1.15	615	245	0.28		0.08	0.05	0.19				
08-MAR-88	30.2	3.8	201.2	12.8	100	4.49	-1.30	20.8	1.15	680	295	0.34		0.06	0.05	0.25				
15-MAR-88	32.0	2.3	216.5	27.6	100	4.49	-2.20	19.3	1.25	655	295	0.36		0.08	0.06	0.20				
29-MAR-88	25.1	3.0	227.2	22.6	100	4.76	-1.10	11.2	0.50	370	195	0.16		0.03	0.03	0.16				
31-MAR-88	23.2	2.1	205.8	23.2	100	5.03	-0.49	6.7	0.30	205	155	0.10		0.03	0.01	0.12				
06-APR-88	14.1	2.9	128.6	28.9	100	5.18	-0.40	5.2	0.20	170	155	0.10		0.04	0.02	0.09				
09-APR-88	11.9	2.3	95.0	34.2	100	5.19	-0.22	5.7	0.45	150	125	0.30		0.16	0.04	0.13				
12-APR-88	7.2	4.0	62.9	45.8	67	5.18	-0.40	5.2	0.20	170	155	0.10		0.04	0.02	0.09				
14-APR-88	6.9	1.2	39.2	5.3	10	5.19	-0.22	5.7	0.45	150	125	0.30		0.16	0.04	0.13				
21-APR-88	6.5	0.8	32.3	5.3	10	5.19	-0.22	5.7	0.45	150	125	0.30		0.16	0.04	0.13				
22-APR-88	0.0	0.0	0.0	0.0	0															
02-MAY-88	30.7	3.2	42.3	4.6	100	4.63	-1.20	11.7	0.95	350	160	0.28		0.09	0.05	0.17				
23-JAN-89	47.3	4.6	101.1	11.3	100	4.63	-1.20	17.1	1.35	555	350	0.34		0.11	0.07	0.22				
06-FEB-89	56.3	1.2	121.0	8.7	100	4.68	-0.95	17.4	1.55	540	350	0.52		0.14	0.45	0.45				
20-FEB-89	72.3	9.0	148.5	17.8	100	4.52	-1.60	18.7	1.35	559	230	0.38		0.09	0.07	0.22				
06-MAR-89	74.7	6.7	172.9	12.8	100	4.27	-2.60	26.6	1.95	704	275	0.36		0.10	0.06	0.33				
16-MAR-89	65.0	8.2	175.2	24.3	100	4.54	-1.50	14.4	1.05	465	200	0.26		0.11	0.05	0.20				
21-MAR-89	85.3	3.2	211.1	11.3	100	4.54	-1.50	14.4	1.05	465	200	0.26		0.11	0.05	0.20				
28-MAR-89	53.0	7.2	166.8	39.3	100	4.69	-1.10	13.0	0.75	430	215	0.22		0.10	0.05	0.23				
30-MAR-89	35.3	3.2	111.0	25.5	100	4.69	-1.10	13.0	0.75	430	215	0.22		0.10	0.05	0.23				
03-APR-89	39.3	4.2	137.8	14.0	100	4.89	-0.76	9.1	0.45	272	200	0.12		0.07	0.00	0.15				
06-APR-89	44.3	1.5	127.9	35.6	100	4.89	-0.76	9.1	0.45	272	200	0.12		0.07	0.00	0.15				
10-APR-89	24.8	2.3	58.3	4.0	100	5.16	-0.22	7.8	0.25	173	170	0.12		0.14	0.02	0.12				
13-APR-89	54.0	4.8	152.3	23.9	100	5.01	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
17-APR-89	42.0	2.6	137.8	10.3	100	5.01	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
21-APR-89	37.0	2.6	121.7	8.1	100	5.07	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
24-APR-89	33.7	3.5	101.1	9.3	100	5.07	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
27-APR-89	17.7	4.5	56.0	4.0	50	5.07	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
01-MAY-89	15.7	1.2	48.4	11.3	50	5.07	-0.30	8.4	0.45	280	180	0.14		0.06	0.03	0.13				
02-MAY-89	0.0	0.0	0.0	0.0	0															
05-DEC-89	37.0	1.3	54.5	23.2	100	4.58	-1.10	14.4	0.75	509	113	0.31	0.05	0.08	0.09	0.19	0.70	0.02	0.01	22
23-DEC-89	33.0	1.7	55.2	11.5	100	4.47	-1.30	17.2	0.95	498	190	0.34	0.05	0.11	0.12	0.19	0.70	0.03	0.01	23
9-DEC-89	41.3	2.5	48.4	4.8	100	4.47	-1.30	17.2	0.95	498	190	0.34	0.05	0.11	0.12	0.19	0.70	0.03	0.01	23
28-DEC-89	48.7	1.5	62.9	17.3	100	3.97	-2.40	22.5	1.20	637	138	0.30	0.04	0.07	0.12	0.40	0.80	0.03	0.01	20
09-JAN-90	60.7	0.6	87.0	5.3	100	4.34	-2.00	24.7	1.00	605	168	0.34	0.05	0.11	0.11	0.26	0.90	0.02	0.02	23
16-JAN-90	50.7	1.2	111.8	14.7	100	4.39	-2.50	22.5	1.20	670	247	0.39	0.06	0.16	0.18	0.34	1.00	0.02	0.02	23
30-JAN-90	57.0	1.0	85.8	0.0	100	4.43	-1.50	21.6	1.25	650	257	0.33	0.07	0.21	0.11	0.22	1.40	0.02	0.03	29
03-FEB-90	55.8	5.3	145.9	9.3	100	4.53	-1.60	18.2	1.15	550	200	0.28	0.03	0.14	0.08	0.21	1.00	0.03	0.02	24
13-FEB-90	55.7	4.0	146.9	9.3	100	4.53	-1.60	18.2	1.15	550	200	0.28	0.03	0.14	0.08	0.21	1.00	0.03	0.02	24
06-FEB-90	58.0	2.0	147.7	8.3	100	4.54	-1.70	18.3	0.90	516	216	0.22	0.04	0.13	0.09	0.20	0.90	0.03	0.02	33
20-FEB-90	57.3	3.1	156.1	3.5	100	4.62	-1.70	18.6	1.03	629	261	0.39	0.06	0.13	0.09	0.24	1.40	0.04	0.02	38
27-FEB-90	70.0	1.7	172.9	18.7	100	4.51	-1.70	18.6	1.03	629	261	0.39	0.06	0.13	0.09	0.24	1.40	0.04	0.02	38
06-MAR-90	67.3	1.5	171.4	8.3	100	4.46	-1.90	19.7	1.05	627	247	0.26	0.04	0.09	0.09	0.19	0.80	0.03	0.01	30

Table 9

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS															
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond55 (conductivity)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)	
15-MAR-90	40.7	1.5	155.7	33.9	100	4.75	-0.97	11.7	0.55	463	232	0.16	0.02	0.11	0.14	0.27	0.60	0.04	0.01	28	
20-MAR-90	28.7	3.5	87.3	5.8	100	4.71	-1.00	11.3	0.56	424	178	0.14	0.03	0.08	0.11	0.20	0.60	0.03	0.01	25	
22-MAR-90	22.8	0.8	60.6	4.6	100	4.83	-0.78	8.7	0.36	299	183	0.07	0.02	0.05	0.16	0.29	0.40	0.04	0.00	33	
03-APR-90	21.3	2.0	70.5	5.8	90																
10-APR-90	21.0	1.7	69.0	3.5	75																
18-APR-90	20.2	1.9	57.5	9.3	50																
19-APR-90	0.0	0.0	0.0	0.0	0																
12-DEC-90	14.5	1.0	27.0	2.6	100	4.57	-1.30	21.3	1.15	472	120	0.32	0.06	0.15	0.90	1.43	0.90	0.04	0.02	43	
19-DEC-90	17.0	0.5	32.3	3.5	100	4.49	-1.40	18.5	1.50	460	127	0.38	0.07	0.17	0.12	0.23	0.70	0.04	0.03	29	
04-JAN-91	40.1	3.0	70.5	3.0	100	4.62	-1.30	14.5	1.00	593	110	0.31	0.06	0.18	0.38	0.63	1.10	0.06	0.02	46	
09-JAN-91	39.7	2.5	87.3	8.1	100	4.60	-1.00	19.3	0.70	364	92	0.20	0.04	0.11	1.47	2.17	0.60	0.11	0.01	46	
17-JAN-91	45.3	0.6	105.7	3.9	100	4.48	-1.50	14.9	0.70	426	119	0.14	0.03	0.08	0.05	0.10	0.50	0.15	0.01	100	
23-JAN-91	47.7	1.6	104.2	6.1	100	4.45	-1.80	17.1	0.95	462	114	0.19	0.03	0.07	0.09	0.17	0.60	0.05	0.01	39	
30-JAN-91	64.7	3.3	136.3	2.3	100	4.31	-2.20	22.5	1.00	628	155	0.19	0.03	0.05	0.44	0.74	0.70	0.05	0.01	24	
05-FEB-91	55.2	0.8	129.4	4.0	100	4.49	-1.70	17.0	0.85	510	136	0.17	0.03	0.07	0.16	0.28	0.50	0.02	0.01	18	
13-FEB-91	46.8	2.9	132.4	10.3	100																
13-FEB-91	52.7	0.6	143.9	3.5	100	4.43	-1.60	15.8	0.85	473	124	0.16	0.04	0.09	0.08	0.16	0.80	0.02	0.01	17	
20-FEB-91	61.0	1.0	164.5	4.5	100	4.51	-1.60	14.5	0.70	428	119	0.14	0.03	0.05	0.07	0.14	0.40	0.02	0.01	22	
27-FEB-91	60.0	0.0	166.5	3.8	100	4.46	-1.50	14.7	0.70	480	136	0.18	0.04	0.06	0.08	0.17	0.50	0.03	0.01	24	
04-MAR-91	53.2	1.4	170.6	8.3	100	4.48	-1.60	15.7	0.70	470	118	0.17	0.04	0.08	0.09	0.24	0.90				
08-MAR-91	57.0	1.0	184.4	4.0	100	4.59	-1.30	13.4	0.75	440	120	0.25	0.03	0.07	0.14	0.34	0.60				
13-MAR-91	54.8	1.1	182.1	3.2	100	4.59	-1.20	13.2	0.60	420	135	0.12	0.03	0.07	0.18	0.32	0.60				
19-MAR-91	47.7	2.4	165.3	13.0	100	4.77	-0.82	9.6	0.35	301	115	0.07	0.01	0.03	0.13	0.24	0.30				
21-MAR-91	49.0	3.2	160.7	13.4	100																
25-MAR-91	43.0	4.3	151.5	20.8	100	4.71	-0.95	9.5	0.55	304	123									2	
28-MAR-91	38.8	4.5	126.6	9.8	100	5.13	-0.45	5.8	0.30	211	113	0.13	0.03	0.08	0.17	0.26	1.00				
02-APR-91	40.3	2.6	136.3	9.2	100	4.80	-0.79	9.5	0.50	270	116	0.13	0.02	0.04	0.13	0.24	0.30				
05-APR-91	32.7	1.3	126.3	10.8	100	4.63															
08-APR-91	36.3	1.3	57.5	7.0	90	1.80															
11-APR-91	8.0	1.8	21.6	6.1	10																
15-APR-91	0.0	0.0	0.0	0.0	0																
19-DEC-91	19.3	0.6	18.6	3.5	100	4.67	-1.00	8.3	0.31	337	42	0.04	0.01	0.06	0.07	0.15	0.80	0.04	0.00		
09-JAN-92	16.8	1.3	31.6	1.3	100	4.78	-0.78	8.5	0.50	341	86	0.10	0.02	0.12	0.11	0.22	0.70	1.49	0.04		
17-JAN-92	34.3	0.6	64.4	1.7	100	4.99	-0.39	10.8	0.95	319	92	0.35	0.05	0.29	0.41	0.57	2.60	0.20	0.01	19	
23-JAN-92	43.5	2.8	91.2	8.7	100	4.58	-1.40	12.6	0.95	363	100	0.18	0.03	0.14	0.09	0.22	0.70	0.04	0.01	16	
30-JAN-92	44.0	1.0	95.0	2.0	100	4.48	-1.80	16.8	1.15	470	140	0.17	0.03	0.14	0.08	0.22	0.50	0.08	0.01	25	
06-FEB-92	47.7	0.6	92.7	13.9	100	4.48	-1.80	18.6	1.35	500	200	0.24	0.06	0.21	0.14	0.34	1.30	0.05	0.01	12	
13-FEB-92	49.3	0.6	108.7	4.0	100	4.46	-2.20	21.2	1.55	657	249	0.35	0.05	0.11	0.09	0.22	1.10	0.06	0.01	11	
20-FEB-92	60.0	1.0	140.1	1.3	100	4.44	-1.90	18.7	1.20	539	200	0.20	0.05	0.11	0.09	0.22	1.20	0.05	0.01	0	
27-FEB-92	73.8	4.0	170.6	2.1	100	4.43	-1.90	18.5	1.35	540	195	0.23	0.04	0.15	0.09	0.23	1.00	0.08	0.01	6	
04-MAR-92	81.7	2.5	181.3	1.3	100	4.46	-1.70	17.9	1.30	520	195	0.23	0.04	0.15	0.09	0.23	1.00	0.08	0.01	7	
13-MAR-92	76.7	0.6	192.8	24.1	100	4.56	-1.20	12.4	0.95	304	127	0.08	0.01	0.05	0.04	0.10	0.40	0.07	0.00	13	
19-MAR-92	74.8	0.6	207.3	11.9	100	4.39	-2.10	16.7	1.40	538	220	0.19	0.03	0.10	0.10	0.20	0.60	0.06	0.01	4	
25-MAR-92	67.2	3.6	189.7	21.3	100	4.45	-1.80	16.2	1.20	491	206	0.15	0.02	0.08	0.12	0.25	0.60	0.06	0.01	70	
01-APR-92	58.5	2.5	191.3	11.9	100	4.53	-1.40	12.3	0.95	325	138	0.11	0.02	0.08	0.07	0.17	0.70	0.06	0.01	10	
08-APR-92	47.5	3.9	179.8	26.0	100	4.35	-2.10	19.2	1.40	553	214	0.17	0.03	0.14	0.11	0.25	0.90	0.04	0.01	10	
15-APR-92	51.0	1.8	175.2	8.3	100	4.67	-1.00	9.9	0.70	327	132	0.12	0.02	0.07	0.05	0.16	0.40	0.07	0.01	38	
21-APR-92	30.8	0.8	111.0	4.0	100	5.13															
24-APR-92	19.0	3.6	61.4	6.6	85																
28-APR-92	12.7	0.8	42.3	2.3	10																
28-MAY-92	0.0	0.0	0.0	0.0	0																

# HARD LAKE SNOW CORE DATA SUMMARY HPSZ04

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS															
	MEAN (cm)	S.D. (mm)	MEAN (mm)	S.D. (mm)		PH	ALK (mg/L)	Cond25 (uS/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)	
21-JAN-88	39.3	2.3	84.2	7.4	100	4.47	-1.90	19.2	1.50	505	180	0.42		0.08	0.06	0.24					
09-FEB-88	41.0	3.6	91.2	15.3	100	4.65	-1.40	13.8	0.85	425	170	0.18		0.13	0.04	0.20					
23-FEB-88	79.8	2.8	169.2	17.8	100	4.82	-0.99	20.0	0.93	530	240	0.26		0.06	0.03	0.30					
06-MAR-88	30.8	2.2	189.2	9.3	100	4.41	-0.47	23.0	1.33	760	320	0.44		0.08	0.06	0.31					
15-MAR-88	39.2	2.9	205.0	22.1	100	4.44	-2.50	20.5	1.23	680	305	0.28		0.06	0.03	0.22					
23-MAR-88	22.3	0.9	166.1	12.1	100	4.82	-1.00	9.3	0.55	375	210	0.12		0.03	0.03	0.16					
31-MAR-88	16.8	1.6	153.1	14.1	100	5.03	-0.57	6.3	0.30	145	140	0.06		0.06	0.01	0.09					
06-APR-88	5.4	1.4	33.8	14.0	67	5.21	-0.32	4.5	0.10	115	120	0.08		0.12	0.03	0.12					
12-APR-88	2.2	0.3	12.3	6.1	0	5.21	-0.32	4.5	0.10	115	120	0.08		0.12	0.03	0.12					
04-MAY-88	0.0	0.0	0.0	0.0	0	4.79	-0.92	13.8	0.83	335	180	0.26		0.35	0.05	0.52					
09-JAN-89	30.0	4.3	36.3	3.7	100	4.79	-0.92	13.8	0.83	335	180	0.26		0.35	0.05	0.52					
23-JAN-89	42.8	2.9	80.3	3.5	100	4.30	-1.30	18.6	1.33	563	300	0.34		0.09	0.07	0.26					
06-FEB-89	35.7	9.1	65.2	9.2	100	4.31	-1.40	18.3	1.40	575	335	0.32		0.20	0.07	0.24					
20-FEB-89	39.3	3.8	121.7	19.5	100	4.31	-1.50	19.6	1.23	616	200	0.44		0.23	0.11	0.29					
06-MAR-89	63.3	5.1	140.8	9.2	100	4.60	-1.10	18.2	1.40	627	145	0.44		0.32	0.16	0.26					
16-MAR-89	30.7	5.0	125.6	23.3	100	4.58	-1.30	13.9	0.90	495	215	0.22		0.19	0.05	0.22					
21-MAR-89	70.7	5.9	166.8	23.4	100	4.58	-1.30	13.9	0.90	495	215	0.22		0.19	0.05	0.22					
28-MAR-89	38.3	4.9	140.8	21.0	100	4.84	-0.81	10.8	0.55	400	225	0.14		0.19	0.04	0.18					
05-APR-89	34.7	1.2	111.0	13.5	100	5.00	-0.66	8.4	0.45	272	220	0.12		0.07	0.00	0.15					
09-APR-89	39.3	2.3	86.6	2.7	100	5.00	-0.66	8.4	0.45	272	220	0.12		0.07	0.00	0.15					
06-MAY-89	27.3	2.3	75.9	4.8	100	5.48	0.00	6.5	0.30	149	145	0.18		0.31	0.03	0.27					
13-APR-89	42.8	2.0	93.3	5.8	100	5.48	0.00	6.5	0.30	149	145	0.18		0.31	0.03	0.27					
17-APR-89	23.0	2.0	67.3	10.0	100	5.37	0.00	6.0	0.20	135	95	0.10		0.25	0.03	0.12					
21-APR-89	14.3	0.3	43.0	1.3	100	5.30	0.00	6.0	0.20	135	95	0.10		0.25	0.03	0.12					
24-APR-89	18.0	1.0	36.1	1.0	100	5.30	-0.28	5.1	0.30	130	125	0.12		0.05	0.03	0.14					
01-MAY-89	24.3	0.0	0.0	0.0	0	4.58	-1.00	14.4	0.80	442	113	0.31	0.08	0.17	0.12	0.25	1.40	0.02	0.02	21	
05-DEC-89	24.3	2.6	29.3	7.0	100	3.93	-5.10	49.4	1.00	1115	175	0.30	0.08	0.14	0.14	0.27	0.80	0.02	0.02	20	
12-DEC-89	27.8	1.6	34.6	3.3	100	3.93	-5.10	49.4	1.00	1115	175	0.30	0.08	0.14	0.14	0.27	0.80	0.02	0.02	20	
19-DEC-89	32.3	0.9	39.2	3.5	100	4.44	-1.30	18.4	0.93	630	163	0.28	0.06	0.18	0.13	0.25	0.60	0.03	0.01	21	
28-DEC-89	46.3	3.1	63.2	2.3	100	4.41	-1.70	22.1	0.90	682	158	0.38	0.07	0.12	0.16	0.30	1.40	0.03	0.02	19	
02-JAN-90	40.2	0.3	63.7	11.3	100	4.33	-1.90	22.3	1.00	647	153	0.27	0.06	0.14	0.16	0.30	0.70	0.02	0.01	18	
09-JAN-90	41.7	4.3	91.2	4.8	100	4.26	-3.20	28.1	1.20	780	186	0.28	0.07	0.20	0.16	0.30	0.90	0.02	0.01	21	
16-JAN-90	35.0	4.0	166.4	13.0	100	4.12	-4.60	38.9	1.40	1350	251	0.31	0.06	0.14	0.16	0.36	1.10	0.02	0.01	27	
23-JAN-90	35.3	1.2	83.3	2.0	100	4.44	-1.50	23.1	1.15	630	227	0.21	0.06	0.14	0.16	0.45	0.76	1.00	0.02	0.01	22
06-FEB-90	31.5	0.9	130.1	2.6	100	4.31	-1.70	18.7	1.00	530	180	0.24	0.08	0.15	0.13	0.29	1.60	0.02	0.02	19	
13-FEB-90	32.7	1.3	137.8	22.6	100	4.50	-1.70	19.1	1.00	602	244	0.24	0.03	0.15	0.11	0.22	0.70	0.04	0.01	41	
20-FEB-90	48.3	0.6	136.3	6.1	100	4.66	-1.30	15.0	0.80	450	196	0.19	0.03	0.15	0.19	0.38	0.80	0.04	0.01	33	
27-FEB-90	30.0	0.0	146.9	8.1	100	4.33	-2.60	26.2	1.60	644	232	0.41	0.08	0.15	0.11	0.26	3.10	0.05	0.02	50	
06-MAR-90	60.3	0.8	170.6	2.3	100	4.48	-1.80	18.8	0.85	639	231	0.21	0.03	0.11	0.10	0.19	0.50	0.03	0.01	27	
15-MAR-90	36.3	0.8	161.5	2.3	100	4.56	-1.50	18.4	0.95	621	245	0.27	0.03	0.14	0.17	0.30	0.80	0.05	0.01	39	
12-MAR-90	55.7	4.0	177.5	9.2	100	4.86	-0.71	9.0	0.35	360	195	0.07	0.02	0.08	0.07	0.19	0.60	0.03	0.00	27	
20-MAR-90	29.3	3.1	105.7	19.8	100	4.95	-0.62	7.6	0.30	291	197	0.05	0.02	0.09	0.13	0.25	0.50	0.06	0.00	71	
27-MAR-90	18.7	0.6	64.4	3.5	90	4.95	-0.62	7.6	0.30	291	197	0.05	0.02	0.09	0.13	0.25	0.50	0.06	0.00	71	
03-APR-90	13.3	0.9	36.9	3.5	75	4.55	-0.62	7.6	0.30	291	197	0.05	0.02	0.09	0.13	0.25	0.50	0.06	0.00	71	
12-APR-90	6.7	2.5	18.6	4.8	25	4.55	-0.62	7.6	0.30	291	197	0.05	0.02	0.09	0.13	0.25	0.50	0.06	0.00	71	



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Conc25 (mmol/L)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
18-APR-90	0.0	0.0	0.0	0.0	0	4.57	-1.20	19.0	0.85	459	128	0.23	0.04	0.08	-0.68	1.10	0.60	0.04	0.01	35
12-DEC-90	10.3	0.3	18.6	1.3	100	4.42	-1.70	20.0	1.20	567	138	0.31	0.05	0.08	0.12	0.25	0.60	0.04	0.01	32
19-DEC-90	14.8	1.0	30.0	4.8	100	4.32	-2.30	12.8	0.55	352	89	0.15	0.03	0.14	0.13	0.25	0.70	0.05	0.01	51
04-JAN-91	36.0	1.1	63.7	1.3	100	4.32	-2.30	12.8	0.55	352	89	0.15	0.03	0.14	0.13	0.25	0.70	0.05	0.01	51
09-JAN-91	39.3	2.5	88.1	6.1	100	4.66	-0.91	19.8	0.65	351	79	0.18	0.04	0.17	1.66	2.32	0.50	0.08	0.01	38
17-JAN-91	44.3	0.6	82.8	8.1	100	4.46	-1.50	15.6	0.80	409	111	0.11	0.03	0.13	0.10	0.22	0.50	0.04	0.02	32
23-JAN-91	45.3	1.6	91.2	10.3	100	4.46	-1.70	17.3	0.95	509	117	0.23	0.04	0.06	0.12	0.23	0.50	0.11	0.01	74
05-FEB-91	61.3	2.0	123.3	3.5	100	4.46	-1.50	17.6	1.20	470	113	0.21	0.07	0.22	0.26	0.46	0.80	0.05	0.01	26
05-FEB-91	45.2	3.6	111.8	4.8	100	4.57	-1.30	16.5	0.90	496	133	0.17	0.04	0.08	0.10	0.20	0.60	0.03	0.01	21
08-FEB-91	39.7	0.8	107.2	9.5	100	4.57	-1.30	16.5	0.90	496	133	0.17	0.04	0.08	0.10	0.20	0.60	0.03	0.01	21
13-FEB-91	45.7	0.6	122.5	4.0	100	4.43	-1.70	15.9	0.90	471	130	0.16	0.04	0.06	0.16	0.28	0.60	0.03	0.01	20
20-FEB-91	49.0	0.0	146.2	3.5	100	4.54	-1.30	13.7	0.70	376	97	0.12	0.03	0.05	0.11	0.20	0.70	0.03	0.01	30
27-FEB-91	50.7	0.3	147.7	2.7	100	4.44	-1.70	15.3	0.75	444	120	0.15	0.03	0.04	0.12	0.22	0.50	0.04	0.03	34
04-MAR-91	39.5	2.6	141.6	7.4	100	4.49	-1.50	18.8	0.75	383	117	0.15	0.03	0.07	0.80	1.45	1.40			
08-MAR-91	38.0	1.0	126.3	5.8	100	4.59	-1.30	11.9	0.65	270	100	0.10	0.02	0.05	0.07	0.17	1.30			
13-MAR-91	37.5	0.5	134.7	11.8	100	4.58	-1.30	13.2	0.70	275	100	0.11	0.03	0.06	0.26	0.44	1.20			
19-MAR-91	29.3	0.6	118.7	6.6	100	4.91	-0.58	7.6	0.35	210	112	0.05	0.02	0.03	0.04	0.13	0.60			
21-MAR-91	34.0	1.7	112.6	8.7	100	4.91	-0.58	7.6	0.35	210	112	0.05	0.02	0.03	0.04	0.13	0.60			
25-MAR-91	29.7	0.6	114.1	7.4	100	4.86	-0.86	6.9	0.00	190	111				0.13	0.26	1.10			
28-MAR-91	18.2	0.8	63.7	2.6	100	4.89	-0.75	6.6	0.40	131	89	0.07	0.02	0.07	0.13	0.26	1.10			
02-APR-91	24.2	1.3	88.1	8.3	100	4.97	-0.38	6.5	0.25	146	72	0.10	0.02	0.08	0.09	0.18	0.80			
05-APR-91	12.7	4.0	52.2	19.1	90	4.97	-0.38	6.5	0.25	146	72	0.10	0.02	0.08	0.09	0.18	0.80			
08-APR-91	6.8	0.6	24.7	4.8	10	4.97	-0.38	6.5	0.25	146	72	0.10	0.02	0.08	0.09	0.18	0.80			
11-APR-91	0.0	0.0	0.0	0.0	0	4.68	-1.10	8.1	0.29	374	44	0.11	0.02	0.05	0.31	0.52	0.40	0.06	0.00	5
19-DEC-91	14.3	0.3	10.2	10.2	100	4.81	-0.70	11.0	0.55	338	69	0.14	0.05	0.15	0.49	0.82	1.10	0.08	0.02	
09-JAN-92	13.8	3.8	27.0	7.0	100	4.61	-1.20	10.0	0.60	287	73	0.08	0.02	0.10	0.11	0.21	0.60	0.04	0.01	13
17-JAN-92	29.2	1.6	44.5	2.3	100	4.65	-1.50	12.3	0.75	381	96	0.10	0.02	0.06	0.13	0.24	0.70	0.06	0.01	16
23-JAN-92	32.5	0.5	65.9	3.5	100	4.56	-1.50	12.3	0.75	381	96	0.10	0.02	0.06	0.13	0.24	0.70	0.06	0.01	16
30-JAN-92	37.0	0.0	75.1	3.5	100	4.51	-1.80	17.3	0.90	460	145	0.12	0.03	0.10	0.14	0.27	0.40	0.05	0.01	6
06-FEB-92	40.2	1.8	77.4	1.3	100	4.51	-1.80	17.3	0.90	460	145	0.12	0.03	0.10	0.14	0.27	0.40	0.05	0.01	6
13-FEB-92	44.5	2.8	85.0	11.5	100	4.45	-2.30	18.9	1.45	521	213	0.22	0.07	0.35	0.13	0.28	1.20	0.12	0.01	13
20-FEB-92	47.7	4.9	104.2	11.5	100	4.42	-2.00	19.2	1.25	540	195	0.17	0.04	0.10	0.12	0.34	0.90	0.04	0.01	11
27-FEB-92	62.0	2.2	119.4	13.0	100	4.38	-2.10	20.8	1.35	575	198	0.20	0.06	0.16	0.15	0.30	1.50	0.05	0.01	4
04-MAR-92	68.0	0.5	154.6	20.6	100	4.35	-2.20	21.9	1.60	560	205	0.22	0.04	0.08	0.11	0.24	1.10	0.07	0.01	11
13-MAR-92	91.0	1.0	157.6	3.5	100	4.49	-1.50	13.5	1.15	275	225	0.08	0.02	0.04	0.06	0.15	1.00	0.07	0.00	9
15-MAR-92	93.3	3.5	169.9	3.5	100	4.46	-1.80	13.9	1.30	356	150	0.13	0.03	0.06	0.09	0.18	1.30	0.05	0.01	0
25-MAR-92	35.3	0.5	168.8	5.3	100	4.46	-1.80	13.9	1.30	356	150	0.13	0.03	0.06	0.09	0.18	1.30	0.05	0.01	0
08-APR-92	44.2	0.8	173.7	9.3	100	4.60	-1.20	11.3	1.05	276	151	0.18	0.05	0.13	0.08	0.21	1.60	0.09	0.02	18
15-APR-92	39.5	2.0	147.7	12.1	100	4.63	-1.20	9.9	0.75	244	160	0.10	0.02	0.10	0.08	0.21	1.40	0.09	0.02	20
21-APR-92	35.3	2.0	124.8	18.2	100	5.03	-0.44	6.7	0.45	189	145	0.05	0.01	0.04	0.03	0.15	0.50	0.03	0.01	19
24-APR-92	10.3	4.5	48.4	9.5	75	5.15	-0.15	5.0	0.30	159	124	0.09	0.02	0.11	0.06	0.22	0.90	0.01	0.01	24
28-APR-92	0.0	0.0	0.0	0.0	0	4.63	-0.15	5.0	0.30	159	124	0.09	0.02	0.11	0.06	0.22	0.90	0.01	0.01	24

HARP LAKE SNOW CORE DATA SUMMARY  
HPSZ06

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS												Fe (mg/L)	Mn (mg/L)	Al (mg/L)
	MEAN (cm)	S.D. (cm)	MEAN (mm)	S.D. (mm)		PH	Alk (mg/L)	Cond25 (umsc/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)			
21-JAN-88	32.5	3.0	80.5	13.8	100	4.57	-1.50	16.5	1.35	465	150	0.34		0.14	0.07	0.21				
05-FEB-88	38.0	1.7	92.7	11.5	100	4.80	-0.09	11.2	0.80	391	137	0.26		0.16	0.05	0.21				
23-FEB-88	71.3	4.9	166.1	6.9	100	4.45	-2.10	20.7	1.25	603	220	0.32		0.16	0.07	0.22				
08-MAR-88	26.0	0.9	173.7	12.6	100	4.47	-2.40	21.5	1.35	705	260	0.46		0.12	0.07	0.23				
15-MAR-88	28.0	1.4	228.0	49.0	100	4.65	-1.40	16.8	1.30	620	250	0.50		0.25	0.13	0.26				
25-MAR-88	17.5	1.0	141.6	13.0	100	4.97	-0.65	7.9	0.50	265	160	0.12		0.07	0.03	0.15				
31-MAR-88	12.5	1.4	108.0	14.6	100	5.17	-0.28	4.8	0.20	125	155	0.08		0.07	0.02	0.13				
06-APR-88	3.4	0.1	23.2	1.3	10	5.17	-0.28	4.8	0.20	125	155	0.08		0.07	0.02	0.13				
09-JAN-89	25.5	2.2	33.1	7.9	100	4.70	-1.10	11.8	0.85	270	135	0.26		0.09	0.05	0.36				
23-JAN-89	43.7	2.1	87.3	11.3	100	4.61	-1.20	16.5	1.35	525	270	0.36		0.11	0.10	0.23				
06-FEB-89	46.3	3.2	80.5	4.8	100	4.55	-1.30	17.4	1.40	520	290	0.34		0.20	0.09	0.21				
20-FEB-89	74.7	3.5	140.1	14.9	100	4.53	-1.30	18.6	1.35	564	230	0.38		0.10	0.09	0.20				
06-MAR-89	71.7	4.9	159.9	16.6	100	4.39	-1.80	19.6	1.35	575	215	0.34		0.07	0.06	0.20				
16-MAR-89	38.7	3.8	147.7	21.0	100	4.47	-1.70	15.8	1.10	515	230	0.24		0.08	0.05	0.21				
21-MAR-89	75.7	2.1	182.1	6.9	100	4.83	-0.76	10.9	0.65	355	205	0.16		0.08	0.04	0.18				
28-MAR-89	47.3	3.8	166.1	24.8	100	4.83	-0.76	10.9	0.65	355	205	0.16		0.08	0.04	0.18				
30-MAR-89	40.7	2.5	114.9	6.6	100	5.73	0.21	9.9	0.45	282	215	0.20		0.06	0.00	0.26				
03-APR-89	36.3	1.2	132.4	53.4	100	5.73	0.21	9.9	0.45	282	215	0.20		0.06	0.00	0.26				
06-APR-89	22.2	1.0	65.2	11.5	100	5.27	-0.18	5.8	0.35	149	135	0.20		0.08	0.03	0.22				
13-APR-89	41.3	7.1	131.7	6.1	100	5.27	-0.18	5.8	0.35	149	135	0.20		0.08	0.03	0.22				
17-APR-89	21.7	4.6	62.1	10.8	100	5.33	0.09	5.7	0.25	140	85	0.12		0.09	0.03	0.10				
21-APR-89	7.0	3.0	13.2	10.8	100	5.33	0.09	5.7	0.25	140	85	0.12		0.09	0.03	0.10				
22-APR-89	0.0	0.0	0.0	0.0	0															
25-DEC-89	25.2	3.2	40.7	7.4	100	4.79	-0.39	12.6	0.80	450	80	0.41	0.14	0.27	0.23	0.40	1.50	0.02	0.02	23
2-DEC-89	26.8	1.9	41.5	3.5	100	4.53	-1.00	16.9	0.95	491	180	0.29	0.07	0.20	0.10	0.23	0.80	0.02	0.01	31
9-DEC-89	37.5	2.6	49.9	1.3	100	4.48	-1.30	17.4	0.95	620	159	0.31	0.08	0.27	0.15	0.28	0.80	0.03	0.02	26
8-DEC-89	44.7	3.8	66.7	3.5	100	4.57	-1.00	17.7	0.90	599	58	0.53	0.15	0.26	0.13	0.26	2.10	0.02	0.03	17
9-JAN-90	40.3	2.9	65.9	11.3	100	4.46	-1.40	20.6	1.30	637	154	0.34	0.09	0.31	0.16	0.32	1.20	0.02	0.01	14
9-JAN-90	43.3	3.1	69.8	18.3	100	4.50	-1.80	25.3	1.60	690	187	0.37	0.10	0.31	0.24	0.46	1.20	0.03	0.01	20
16-JAN-90	37.0	2.6	102.6	2.6	100	4.52	-1.90	20.6	1.60	630	229	0.35	0.11	0.38	0.15	0.28	1.30	0.02	0.02	28
23-JAN-90	62.0	2.6	81.2	0.0	100	4.62	-0.97	17.3	1.20	590	249	0.21	0.07	0.45	0.15	0.26	1.00	0.03	0.01	25
30-JAN-90	38.0	4.3	127.3	26.2	100	4.55	-1.50	17.7	1.00	554	230	0.18	0.04	0.17	0.08	0.20	0.60	0.03	0.01	25
06-FEB-90	34.0	3.0	148.5	3.5	100	4.38	-1.40	17.8	0.95	596	251	0.24	0.05	0.24	0.11	0.22	0.70	0.03	0.01	71
13-FEB-90	49.7	2.1	143.1	8.3	100	4.64	-1.30	16.6	1.10	585	204	0.35	0.08	0.44	0.09	0.21	0.90	0.05	0.01	60
20-FEB-90	49.7	1.5	143.1	2.3	100	4.67	-1.40	15.7	1.05	584	232	0.30	0.08	0.13	0.07	0.18	0.70	0.07	0.02	121
27-FEB-90	62.3	2.5	174.7	11.1	100	4.70	-1.20	14.4	0.85	540	259	0.22	0.07	0.24	0.12	0.20	0.50	0.02	0.01	31
06-MAR-90	60.2	0.5	173.7	5.8	100	4.50	-1.70	19.4	1.10	650	250	0.27	0.06	0.22	0.10	0.21	0.90	0.03	0.01	31
12-MAR-90	32.0	3.0	147.7	10.5	100	4.86	-0.78	9.5	0.45	394	219	0.12	0.02	0.13	0.07	0.18	0.60	0.05	0.01	52
15-MAR-90	32.7	1.5	160.3	24.7	100	4.57	-0.38	8.2	0.35	331	198	0.10	0.03	0.10	0.08	0.18	0.60	0.06	0.01	56
20-MAR-90	24.3	2.5	65.2	10.0	75	4.97	-0.38	8.2	0.35	331	198	0.10	0.03	0.10	0.08	0.18	0.60	0.06	0.01	56
27-MAR-90	15.3	2.5	40.0	7.9	25															
02-APR-90	0.0	0.0	0.0	0.0	0															
18-APR-90	0.0	0.0	0.0	0.0	1															
12-APR-90	0.0	0.0	0.0	0.0	0															
18-APR-90	0.0	0.0	0.0	0.0	0															
12-DEC-90	10.0	0.0	18.6	1.3	100	4.52	-1.40	19.5	1.00	547	146	0.27	0.05	0.07	0.48	0.75	0.80	0.03	0.01	33
19-DEC-90	14.5	0.5	26.2	4.0	100	4.65	-1.00	15.6	1.20	481	121	0.39	0.11	0.14	0.13	0.24	0.90	0.04	0.02	32



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS														
	MEAN (cm)	S.D.	MEAN (mm)	S.D.		PH	Alk (mg/L)	Cond25 (umens/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Cu (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)	Mn (mg/L)	Al (mg/L)
04-JAN-91	33.7	3.5	55.2	2.6	100	4.37	-2.10	13.2	0.50	322	95	0.12	0.03	0.15	0.15	0.30	0.80	0.03	0.01	42
09-JAN-91	36.0	3.5	78.2	9.3	100	4.61	-1.00	12.7	0.55	302	71	0.21	0.06	0.16	0.30	0.44	0.90	0.04	0.01	27
17-JAN-91	41.3	3.1	85.0	7.4	100	4.59	-1.10	14.8	0.95	415	85	0.24	0.07	0.15	0.07	0.14	0.60	0.06	0.02	47
23-JAN-91	46.8	1.8	86.6	11.3	100	4.48	-1.60	17.5	1.35	462	116	0.27	0.07	0.24	0.09	0.20	0.80	0.04	0.02	27
30-JAN-91	63.5	1.8	123.3	3.3	100	4.48	-1.80	19.2	1.05	587	134	0.20	0.05	0.10	0.11	0.31	0.70	0.03	0.01	23
05-FEB-91	47.0	1.0	120.2	4.0	100	4.55	-1.40	16.1	0.90	468	133	0.15	0.03	0.07	0.15	0.25	0.59	0.06	0.01	41
13-FEB-91	39.0	1.3	166.4	4.6	100	4.58	-1.20	13.1	0.95	374	103	0.17	0.05	0.30	0.10	0.19	0.90	0.02	0.01	18
18-FEB-91	41.7	5.1	131.7	23.8	100	4.53	-1.50	14.8	0.85	405	117	0.13	0.03	0.15	0.15	0.33	0.40	0.03	0.01	24
20-FEB-91	54.7	0.6	142.4	5.3	100	4.53	-1.60	15.5	0.75	453	165	0.14	0.03	0.06	0.09	0.15	0.40	0.03	0.00	25
27-FEB-91	52.8	9.3	156.9	10.0	100	4.46	-0.99	11.5	0.50	380	169	0.13	0.03	0.10	0.22	0.37	0.80			
04-MAR-91	41.7	7.9	145.4	20.4	100	4.68	-0.99	8.7	0.35	280	105	0.03	0.01	0.03	0.06	0.13	0.50			
08-MAR-91	44.3	2.9	134.7	8.1	100	4.71	-1.00	11.9	0.55	385	120	0.13	0.03	0.07	0.14	0.24	0.60			
13-MAR-91	44.3	2.3	147.7	10.0	100	4.65	-1.10	11.9	0.55	385	120	0.13	0.03	0.07	0.14	0.24	0.60			
19-MAR-91	34.0	0.9	124.0	4.8	100	4.86	-0.76	6.6	0.25	213	98	0.04	0.01	0.04	0.06	0.12	0.40			
21-MAR-91	53.3	3.5	114.9	3.5	100	4.56	-0.52	5.6	0.00	189	106				0.13	0.30				
25-MAR-91	29.0	6.1	168.0	17.2	100	5.26	-0.47	2.8	0.15	105	70	0.06	0.01	0.04	0.06	0.12	0.30			
28-MAR-91	29.5	2.8	62.1	74.3	100	5.26	-0.47	2.8	0.15	105	70	0.06	0.01	0.04	0.06	0.12	0.30			
02-APR-91	22.5	1.8	74.3	6.9	90	5.08	-0.45	5.1	0.20	138	91	0.06	0.02	0.04	0.07	0.14	0.50			
08-APR-91	22.5	3.5	36.9	35.6	50															
08-APR-91	0.0	0.0	0.0	0.0	0															
09-DEC-91	14.2	0.3	8.6	1.3	100	4.61	-1.30	8.4	0.05	352	30	0.03	0.00	0.02	0.10	0.25	0.30	0.03	0.00	3
09-DEC-91	11.7	0.6	18.6	3.5	100	4.71	-0.97	11.9	0.75	375	63	0.20	0.07	0.16	0.27	0.49	1.20	0.05	0.02	
17-JAN-92	27.2	0.8	49.9	3.5	100	4.56	-1.30	13.5	1.20	337	71	0.28	0.07	0.24	0.08	0.21	1.30	0.04	0.02	13
23-JAN-92	34.3	0.6	68.2	1.3	100	4.60	-1.30	14.0	1.15	376	103	0.21	0.06	0.18	0.12	0.26	0.90	0.04	0.01	17
30-JAN-92	38.7	0.6	64.0	3.0	100	4.59	-1.30	16.2	1.80	470	120	0.44	0.13	0.32	0.11	0.29	1.10	0.05	0.03	0
06-FEB-92	38.2	0.3	67.5	4.6	100	4.63	-1.20	15.5	1.20	503	177	0.29	0.09	0.24	0.10	0.24	1.20	0.10	0.02	39
13-FEB-92	44.2	0.8	88.9	3.5	100	4.44	-2.60	20.9	1.60	659	232	0.31	0.07	0.23	0.14	0.30	1.10	0.09	0.02	11
20-FEB-92	46.3	1.5	101.9	2.3	100	4.66	-1.10	21.5	2.00	552	204	0.36	0.10	0.37	0.12	0.31	1.40	0.05	0.02	4
27-FEB-92	61.5	1.7	130.1	9.3	100	4.39	-2.00	20.2	1.30	566	214	0.16	0.04	0.07	0.11	0.25	0.80	0.05	0.01	10
04-MAR-92	67.7	1.5	146.2	1.3	100	4.38	-2.00	19.1	1.40	560	220	0.11	0.03	0.06	0.11	0.24	0.70	0.05	0.01	17
13-MAR-92	59.7	1.4	143.9	1.3	100	4.62	-1.10	12.8	0.95	340	140	0.11	0.02	0.07	0.06	0.17	1.00	0.05	0.01	9
25-MAR-92	53.0	4.8	155.4	2.6	100	4.63	-1.10	11.3	0.98	359	152	0.12	0.02	0.07	0.06	0.14	0.70	0.05	0.01	4
15-APR-92	53.8	2.8	184.4	10.5	100	4.64	-1.20	11.3	0.85	359	168	0.11	0.02	0.06	0.06	0.16	0.30	0.06	0.01	12
01-APR-92	44.0	1.0	171.4	3.5	100	4.70	-0.95	10.2	0.75	304	153	0.13	0.03	0.10	0.23	0.43	0.80	0.02	0.01	24
08-APR-92	33.8	3.8	123.3	23.5	100	5.25	-0.12	6.3	0.55	214	145	0.28	0.03	0.15	0.09	0.21	1.10	0.04	0.01	9
15-APR-92	32.5	1.7	116.4	9.5	100	5.09	-0.39	5.0	0.30	199	141	0.00	0.01	0.05	0.03	0.14	0.20	0.06	0.00	18
21-APR-92	8.3	2.9	28.5	9.2	5															
24-APR-92	0.0	0.0	0.0	0.0	0															

Table 11 (cont'd)

# HARP LAKE SNOW CORE DATA SUMMARY

## HPSZ07

SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS												Fe (mg/L)	Mn (mg/L)	Al (mg/L)
	MEAN	S.D.	MEAN	S.D.		PH	Alk (mg/L)	Cond25 (umsc/cm)	SO4 (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)			
21-JAN-88	42.7	3.2	97.3	6.1	100	4.50	-1.70	16.8	1.20	465	150	0.32	0.10	0.06	0.06	0.36				
09-FEB-88	48.3	4.5	106.0	16.9	100	4.76	-1.03	12.4	0.85	417	165	0.22	0.08	0.05	0.05	0.21				
23-FEB-88	85.7	4.0	185.2	8.7	100	4.56	-1.60	17.2	1.00	560	240	0.30	0.13	0.05	0.13	0.05	0.22	0.60	0.01	29
08-MAR-88	32.7	1.9	219.5	5.3	100	4.80	-0.79	15.0	1.15	645	230	0.64	0.12	0.08	0.12	0.28	0.40	0.10	0.02	59
15-MAR-88	33.7	1.1	216.5	15.9	100	4.76	-1.30	15.3	1.30	535	195	0.58	0.15	0.10	0.20	0.20	1.50	0.03	0.02	23
29-MAR-88	24.0	0.9	211.1	25.8	100	4.75	-1.00	11.8	0.65	375	185	0.16	0.07	0.03	0.03	0.16	0.90	0.04	0.02	34
31-MAR-88	22.9	1.8	205.0	41.3	100	5.10	-0.50	5.8	0.30	160	150	0.10	0.04	0.01	0.01	0.12	0.70	0.02	0.00	24
06-APR-88	9.9	3.4	83.5	25.2	100	5.10	-0.50	5.8	0.30	160	150	0.10	0.04	0.01	0.01	0.12	0.70	0.02	0.00	24
08-APR-88	6.1	3.1	40.7	28.8	100	5.23	-0.47	4.9	0.20	140	135	0.10	0.04	0.01	0.01	0.09	0.50	0.03	0.01	85
12-APR-88	4.1	0.6	30.8	11.5	63	5.23	-0.47	4.9	0.20	140	135	0.10	0.04	0.01	0.01	0.09	0.50	0.03	0.01	36
14-APR-88	2.9	0.8	14.0	5.8	33	5.28	-0.06	4.9	0.40	150	130	0.18	0.10	0.03	0.03	0.12	0.70	0.02	0.00	30
19-APR-88	8.1	1.6	51.4	15.0	10	5.28	-0.06	4.9	0.40	150	130	0.18	0.10	0.03	0.03	0.12	0.70	0.02	0.00	30
21-APR-88	8.4	0.8	47.6	10.8	10	5.28	-0.06	4.9	0.40	150	130	0.18	0.10	0.03	0.03	0.12	0.70	0.02	0.00	30
22-APR-88	0.0	0.0	0.0	0.0	0															
29-APR-88	35.7	1.2	46.1	4.8	100	4.81	-0.86	11.4	0.85	335	160	0.24	0.12	0.04	0.04	0.23				
23-JAN-89	52.3	2.5	111.8	1.3	100	4.47	-1.60	23.4	1.35	770	280	0.28	0.06	0.05	0.05	0.31				
06-FEB-89	65.0	3.0	117.9	22.1	100	4.57	-1.30	16.0	1.65	525	280	0.42	0.50	0.10	0.10	0.47				
20-FEB-89	88.0	5.0	159.2	32.3	100	4.48	-1.70	17.1	1.35	590	245	0.36	0.08	0.08	0.08	0.21				
06-MAR-89	67.0	10.6	198.9	89.2	100	4.51	-1.60	18.3	1.50	550	215	0.38	0.27	0.07	0.07	0.23				
16-MAR-89	74.7	1.5	177.5	13.9	100	4.49	-1.60	16.5	1.35	535	220	0.28	0.12	0.05	0.05	0.21				
21-MAR-89	86.7	6.1	192.8	11.8	100	4.86	-0.72	12.4	0.85	425	180	0.38	0.22	0.07	0.07	0.19				
28-MAR-89	63.3	1.5	189.0	24.3	100	4.86	-0.72	12.4	0.85	425	180	0.38	0.22	0.07	0.07	0.19				
30-MAR-89	45.0	4.0	155.1	6.6	100	4.94	-0.61	9.8	0.65	297	195	0.16	0.08	0.00	0.00	0.13				
03-APR-89	61.3	2.1	187.5	10.3	100	4.98	-0.57	7.9	0.45	238	175	0.16	0.07	0.03	0.03	0.11				
06-APR-89	54.2	6.6	155.8	16.9	100	4.98	-0.57	7.9	0.45	238	175	0.16	0.07	0.03	0.03	0.11				
10-APR-89	57.5	3.9	162.2	23.2	100	4.93	-0.61	9.0	0.50	280	180	0.14	0.03	0.03	0.02	0.13				
17-APR-89	45.0	6.9	159.2	37.9	100	4.93	-0.61	9.0	0.50	280	180	0.14	0.03	0.03	0.02	0.13				
21-APR-89	43.3	4.0	154.6	4.6	100	5.20	-0.43	6.0	0.25	200	170	0.10	0.09	0.02	0.02	0.13				
24-APR-89	31.7	3.2	102.6	13.0	100	5.20	-0.43	6.0	0.25	200	170	0.10	0.09	0.02	0.02	0.13				
27-APR-89	12.0	0.9	44.6	6.1	50															
01-MAY-89	14.0	1.0	40.0	2.3	2															
02-MAY-89	0.0	0.0	0.0	0.0	0															
05-DEC-89	31.5	2.5	41.5	9.5	100	4.59	-1.00	13.6	0.75	485	118	0.24	0.05	0.19	0.05	0.17	0.70	0.04	0.01	41
12-DEC-89	32.3	1.0	43.8	2.6	100	4.43	-1.40	17.7	0.90	495	180	0.25	0.04	0.18	0.09	0.22	0.60	0.03	0.01	29
19-DEC-89	42.3	2.1	46.8	4.6	100	4.45	-1.40	17.7	0.90	495	180	0.25	0.04	0.18	0.09	0.22	0.60	0.03	0.01	29
28-DEC-89	55.3	5.5	65.2	7.9	100	4.45	-1.50	19.3	0.75	641	107	0.31	0.07	0.32	0.14	0.29	1.50	0.03	0.02	23
02-JAN-90	47.3	7.1	82.8	11.5	100	4.42	-1.60	20.1	0.95	637	147	0.31	0.06	0.20	0.14	0.28	0.90	0.04	0.02	34
02-JAN-90	50.2	4.5	97.3	4.5	100	4.43	-2.40	20.3	0.90	600	196	0.22	0.04	0.17	0.13	0.29	0.70	0.03	0.01	24
16-JAN-90	64.7	1.5	121.0	5.3	100	4.45	-2.20	21.2	1.00	630	249	0.22	0.04	0.12	0.12	0.18	0.70	0.02	0.00	24
23-JAN-90	68.0	2.6	90.4	0.0	100	4.53	-1.20	18.0	0.90	590	216	0.19	0.05	0.14	0.11	0.30	0.60	0.05	0.01	85
30-JAN-90	59.7	4.4	141.6	12.6	100	4.54	-1.60	17.4	0.85	560	225	0.17	0.03	0.14	0.09	0.19	0.50	0.03	0.01	36
06-FEB-90	59.8	2.6	160.7	16.6	100	4.52	-1.70	18.7	0.95	586	249	0.19	0.04	0.26	0.13	0.24	0.70	0.03	0.01	30
13-FEB-90	59.0	3.6	153.1	5.3	100	4.50	-1.90	19.2	1.00	615	247	0.20	0.04	0.17	0.11	0.24	0.70	0.03	0.01	32
20-FEB-90	63.3	4.6	151.5	20.8	100	4.55	-1.60	17.3	0.95	565	249	0.20	0.04	0.13	0.07	0.15	0.60	0.03	0.01	28
27-FEB-90	78.2	3.7	187.5	19.5	100	4.50	-1.80	18.0	0.90	602	241	0.23	0.04	0.18	0.09	0.16	0.50	0.04	0.01	36
06-MAR-90	74.5	0.5	217.3	13.8	100	4.48	-1.90	18.0	1.10	617	269	0.25	0.05	0.17	0.09	0.19	0.60	0.04	0.01	31
12-MAR-90	60.3	1.5	205.8	4.8	100															



SAMPLE DATE	SNOW DEPTH		WATER EQUIVALENCE		% COVER	CHEMICAL PARAMETERS													Al (mg/L)	
	MEAN	S.D.	MEAN	S.D.		PH	Alk (mg/L)	Cond25 (microhm/cm)	SO <sub>4</sub> (mg/L)	Nitrate (ug/L)	Ammonia (ug/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	Cl (mg/L)	DOC (mg/L)	Fe (mg/L)		Mn (mg/L)
15-MAR-90	42.7	1.5	145.4	4.0	100	4.79	-0.89	9.8	0.40	372	182	0.09	0.02	0.08	0.06	0.14	0.40	0.04	0.00	32
20-MAR-90	34.0	2.6	98.0	13.4	100	4.89	-0.78	8.0	0.35	312	164	0.07	0.02	0.06	0.07	0.15	0.30	0.10	0.01	74
03-APR-90	29.0	1.7	75.9	9.3	75	4.98	-0.54	7.3	0.30	276	181	0.10	0.02	0.11	0.12	0.22	1.70	0.10	0.01	87
07-APR-90	20.8	4.1	64.4	15.3	75															
12-APR-90	20.8	2.8	66.7	8.1	75															
18-APR-90	26.8	3.5	72.1	10.0	50															
19-APR-90	0.0	0.0	0.0	0.0	0															
12-DEC-90	17.7	1.0	26.2	2.3	100	4.63	-1.10	19.1	0.80	410	111	0.24	0.04	0.09	0.10	1.67	0.50	0.06	0.01	50
04-JAN-91	21.2	1.0	33.8	1.3	100	4.57	-1.20	14.6	0.95	356	95	0.20	0.03	0.10	0.20	0.32	0.50	0.02	0.02	19
19-DEC-90	46.3	2.5	59.1	3.5	100	4.49	-1.60	17.2	0.55	357	88	0.27	0.09	0.11	0.36	1.50	0.80	0.05	0.01	47
09-JAN-91	46.0	2.6	83.5	10.0	100	4.85	-0.48	15.8	0.75	367	88	0.46	0.09	0.20	1.56	2.25	3.00	0.15	0.01	74
17-JAN-91	48.7	2.1	103.4	3.5	100	4.60	-1.10	12.1	0.65	416	105	0.23	0.06	0.08	0.05	0.10	0.50	0.24	0.02	185
23-JAN-91	50.5	1.7	98.8	3.3	100	4.41	-1.90	17.6	0.95	475	122	0.13	0.03	0.09	0.09	0.18	0.40	0.04	0.01	26
30-JAN-91	73.3	2.0	137.0	8.1	100	4.35	-2.00	19.4	0.85	365	132	0.15	0.03	0.05	0.31	0.54	0.40	0.03	0.06	20
05-FEB-91	62.8	3.7	144.7	13.3	100	4.51	-1.50	15.7	0.85	484	127	0.19	0.03	0.07	0.10	0.20	0.60	0.04	0.01	33
08-FEB-91	46.7	1.9	127.1	6.9	100	4.63	-1.00	12.3	0.85	453	92	0.28	0.11	0.15	0.09	0.18	0.90	0.07	0.01	68
13-FEB-91	55.3	1.3	134.7	21.8	100	4.49	-1.60	14.7	0.75	475	112	0.16	0.04	0.16	0.09	0.16	0.50	0.03	0.01	24
20-FEB-91	63.7	1.3	153.8	3.5	100	4.44	-1.60	15.8	0.70	476	131	0.12	0.02	0.04	0.07	0.14	0.30	0.03	0.00	29
27-FEB-91	65.7	2.3	161.5	6.1	100	4.67	-1.10	10.7	0.45	367	107	0.15	0.05	0.13	0.10	0.20	1.20			
04-MAR-91	53.0	2.6	145.4	2.3	100	4.59	-1.30	11.6	0.45	360	105	0.07	0.02	0.05	0.07	0.14	0.80			
13-MAR-91	49.5	1.8	163.8	7.9	100	4.81	-1.00	9.6	0.55	370	94	0.17	0.05	0.42	0.08	0.17	1.20			
17-MAR-91	47.8	2.3	163.8	6.1	100	4.70	-1.00	9.8	0.50	314	93	0.14	0.04	0.07	0.05	0.13	0.40			
23-MAR-91	50.7	5.0	156.1	20.8	100															
25-MAR-91	48.0	1.5	168.3	2.3	100	4.77	-0.84	7.9	0.90	274	117	0.07	0.04	0.13	0.03	0.10	0.50			
28-MAR-91	49.7	0.8	155.4	7.0	100	4.98	-0.73	5.5	0.30	188	93	0.07	0.04	0.13	0.03	0.09	0.18	0.40		
05-APR-91	38.0	2.0	141.6	11.8	100	4.95	-0.54	7.1	0.30	218	129	0.08	0.02	0.05	0.09	0.18	0.40			
08-APR-91	21.5	1.7	82.0	10.8	50															
11-APR-91	11.8	1.8	79.3	4.8	10															
15-APR-91	0.0	0.0	0.0	0.0	0															
19-DEC-91	23.3	3.1	24.7	9.3	100	4.77	-0.87	5.7	0.31	311	45	0.06	0.02	0.07	0.05	0.12	0.60	0.04	0.01	3
09-JAN-92	21.5	2.2	46.8	6.1	100	4.68	-1.00	10.2	0.55	350	88	0.10	0.02	0.06	0.16	0.31	0.50	0.99	0.01	
17-JAN-92	35.7	2.1	72.1	4.6	100	4.60	-1.30	10.8	0.75	328	90	0.14	0.03	0.13	0.08	0.17	0.60	0.04	0.01	13
23-JAN-92	44.0	1.8	85.8	4.0	100	4.65	-1.30	9.7	0.65	328	94	0.08	0.02	0.10	0.09	0.21	0.40	0.03	0.01	15
06-FEB-92	47.0	2.0	99.6	6.9	100	4.57	-1.50	13.6	0.95	420	135	0.14	0.04	0.14	0.14	0.27	0.50	0.30	0.02	78
06-FEB-92	47.8	1.9	91.9	10.8	100	4.43	-2.00	17.8	1.15	554	221	0.13	0.04	0.10	0.08	0.19	0.90	0.08	0.01	9
13-FEB-92	55.7	1.6	107.2	1.3	100	4.40	-2.00	17.5	1.10	527	210	0.17	0.04	0.11	0.10	0.22	0.80	0.04	0.01	57
20-FEB-92	60.7	5.7	146.9	10.6	100	4.43	-1.90	18.4	1.10	522	201	0.14	0.03	0.07	0.10	0.22	0.80	0.04	0.01	4
27-FEB-92	75.7	3.4	147.7	12.8	100	4.49	-1.60	17.7	1.25	553	216	0.21	0.05	0.16	0.10	0.23	0.80	0.11	0.01	20
04-MAR-92	79.2	2.5	162.2	8.7	100	4.46	-1.70	19.0	1.01	535	210	0.21	0.05	0.14	0.11	0.26	0.90	0.08	0.01	20
13-MAR-92	64.7	0.6	173.7	12.6	100	4.58	-1.20	11.4	0.85	321	147	0.06	0.01	0.06	0.04	0.13	0.40	0.05	0.00	6
19-MAR-92	62.8	1.3	194.3	3.5	100	4.65	-1.10	9.2	0.75	295	139	0.08	0.02	0.08	0.06	0.12	0.70	0.06	0.00	6
25-MAR-92	61.0	1.0	194.3	2.6	100	4.69	-1.00	9.8	0.80	356	163	0.13	0.04	0.13	0.07	0.17	0.70	0.12	0.01	20
01-APR-92	52.8	1.3	186.7	2.3	100	4.59	-1.20	13.6	0.90	376	192	0.13	0.03	0.19	0.20	0.39	3.40	0.06	0.01	18
08-APR-92	47.2	0.3	183.6	9.3	100	5.14	-0.09	9.9	0.95	285	128	0.36	0.06	0.44	0.28	0.51	2.80	0.07	0.02	10
15-APR-92	48.7	0.3	181.5	12.8	100	4.68	-1.10	10.2	0.65	291	136	0.06	0.02	0.07	0.04	0.12	0.70	0.01	0.01	15
21-APR-92	32.7	0.8	127.8	5.8	95	5.05	-0.32	5.8	0.30	210	141	0.05	0.01	0.07	0.07	0.20	0.30	0.01	0.01	0
24-APR-92	16.7	5.0	46.1	17.5	60															
28-APR-92	7.8	3.0	21.6	8.3	10															
01-MAY-92	0.0	0.0	0.0	0.0	0															







